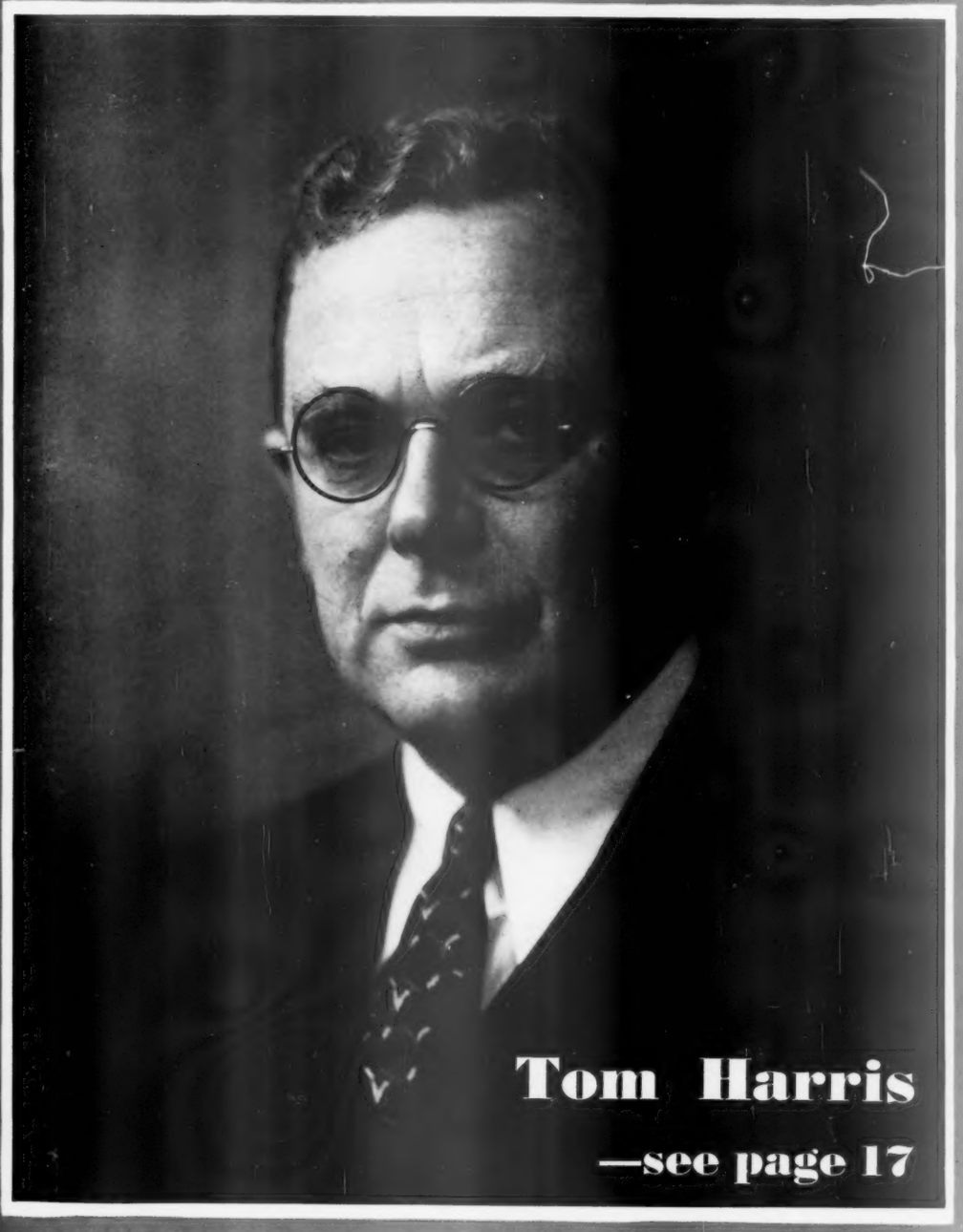
JUN 4 '37

PURCHASING

CONSOLIDATED WITH • The Executive PURCHASER



Tom Harris

—see page 17

Vol. V No. 3

MARCH 1937

GREAT NAMES IN STEEL

famous trade-marks and products

A QUICK INDEX FOR THE PURCHASING AGENT'S FILE

OPEN HEARTH STEELS AND IRONS
Agathon Alloy Steels; Carbon Steels; Republic Double Strength Steel; Toncan Iron.

ELECTRIC FURNACE STEELS
Agathon Alloy Steels; Enduro Stainless and Heat-Resisting Steels; Carbon Steels.

BESSEMER STEELS

TOOL STEELS

PIG IRON
Basic, Bessemer, Foundry and Malleable.

COKE AND BY-PRODUCTS

BAR MILL PRODUCTS
Alloy Steels; Carbon Steels; Toncan Iron; Enduro Stainless Steels; Republic Double Strength Steel; Nitralloy—Standard and Special Sections.

DIE-ROLLED PRODUCTS

ENDURO STAINLESS AND HEAT-RESISTING STEELS
All Standard Chromium and Chromium-Nickel Types — Available in Sheets, Hot and Cold Rolled Strip, Plates, Hot and Cold Drawn Bars, Tube Rounds, Slabs, Billets, Bolts, Nuts, Rivets — May be had in All Commercial Finishes.

HEAT-TREATED OR ANNEALED PRODUCTS

PIPE
Plain and Copper-Bearing Steel; Toncan Iron — Black and Galvanized — Steam, Water, Gas and Oil Pipe; Buttweld, Lapweld, and Electric Weld Pipe; Pipe for Bending and Flanging; Ammonia Pipe; Oil Country Goods; Line Pipe; Drive Pipe; Tubing; Casing; Water Well Casing.

PLATES
Steel; Toncan Iron; Enduro Stainless Steel; Republic Double Strength Steel.

RAIL STEEL PRODUCTS
Structural and Agricultural Shapes; Concrete Reinforcing Bars; Fence Posts and Assemblies.

SEMI-FINISHED STEEL
Blooms, Billets and Slabs; Sheet Bars; Skelp; Wire Rods.

SHEETS
Hot and Cold Rolled; Flat and Corrugated; Black (all finishes); Blue Annealed; Galvanized; Galvannealed; Enameling; Electrical; Oven Lining; Long Ternes; Furniture; Auto Body; Roofing and Siding Products — Plain and Copper-Bearing Steel; Copper-Bearing Iron, Toncan Iron and Enduro Stainless Steel.

SPIKES
Track, Boat and Barge Spikes; Tie Plates; Maney Guard Rail.

STRIP
Hot and Cold Rolled Steel, Republic Double Strength Steel, Toncan Iron, Electrical, Enduro Stainless Steel.

TIN PLATE
Coke Tin Plate; Exlite Tin Plate; Special Coated Terne Plate; Tin Mill Black; Lacquered and Coated Plate in Solid Colors.

WIRE AND WIRE PRODUCTS
Drawn Wire; Wire Nails; Woven and Barbed Wire Fencing; Poultry Netting; Bale Ties.

PRODUCTS OF BOLT AND NUT DIVISION
Bolts and nuts in all standard and special shapes, sizes, alloys and finishes. Standard and special rivets of all kinds. Wire rope clips. Turnbuckles. Automotive and railroad special items. Headed and threaded products for every use.

PRODUCTS OF CANTON CULVERT DIVISION
Galvanized Corrugated Metal Pipe — Toncan Iron, Copper-Bearing Iron, Pure Iron, Copper-Bearing Steel — Plain and Perforated. Toncan Sectional Plate Pipe and Arches; Corrugated Sheet Steel Piling Forms; Tyton Sluice Gates.

SUBSIDIARIES

PRODUCTS OF BERGER MANUFACTURING COMPANY
Metal Office Furniture, Lockers, Trays, Bins, Shelving, Racks, Counters, Voting Machines and Booths, Signs, Frames, Tool Boxes, Bottle Cases and Racks, Air Conditioning Cabinets, Kitchen Cabinets, Boiler Jackets.

PRODUCTS OF NILES STEEL PRODUCTS COMPANY
Stampings and Pressed Steel Parts; Barrels and Drums; Pails.

PRODUCTS OF STEEL AND TUBES, INC.
Boiler Tubes, Condenser Tubes, Mechanical Tubing, Rail Carbon Structural Tubing, Enduro Stainless Steel Tubing, Stampings, Electrical Conduit.

PRODUCTS OF TRUSCON STEEL COMPANY
Complete Line of Steel Window Products, Doors, Flooring Systems, Bridge Flooring, Joists, Structural Steel, Metal Lath and Accessories, Highway Reinforcing Steel Products, Steel-Faced Insulation Products, Steel Poles, Pressed and Drawn Products, Complete Steel Buildings, Steeldeck Roofs, Radio Towers, Window Mufflers.

PRODUCTS OF UNION DRAWN STEEL COMPANY
Cold Drawn and Turned and Polished Steel; Turned and Ground Shafting; Free Cutting Screw Steel; Rounds, Squares, Flats, Hexagons and Special Shapes; Pump and Piston Rod; Axle; Needle Bar Stock; Crankshafts; Bessemer, Open Hearth, Alloy and Electric Steels for special work in a wide range of analyses.

Republic Steel Corporation
AND SUBSIDIARIES
GENERAL OFFICES . . . CLEVELAND, OHIO

BERGER MANUFACTURING CO., CANTON, O.
NILES STEEL PRODUCTS CO., NILES, OHIO
STEEL AND TUBES, INC., CLEVELAND, OHIO
TRUSCON STEEL CO., YOUNGSTOWN, OHIO
UNION DRAWN STEEL CO., MASSILLON, OHIO

When writing Republic Steel Corp. (or Steel and Tubes, Inc.) for further information, please address Department EP

"ASLEEP IN THE DEEP"

New Mattress Material is Typical Example of Goodrich Development

MATTRESS manufacturers faced a tough problem for years. They wanted to make their better grades without humps or tufts—but there was no satisfactory material for bridging the gaps between springs. Pads of inelastic material finally lost their shape, allowed the cotton to shift about, resulted in discomfort.

Goodrich Application Engineers developed a method of weaving hair into loops, and dipping them in latex—first form of rubber. The result—called Nukraft—is upholstery with no tufts nor bumps but, instead, *permanent comfort.*

Makers of mattresses, furniture, automobiles, theatre seats seized upon this new Goodrich invention. Their sales leaped—because people will always pay for comfort.

Whether you make mattresses or motor boats, arm chairs or airplanes, the story of Nukraft is important to you. It illustrates the ability and aggressiveness of Goodrich engineers in developing new properties, new improvements in rubber, and putting them to practical use for industry.

All the skill in compounding, testing, manufacturing rubber products—gained in these special applications—is available *and used* to make Highflex Transmission Belting, Longlife Conveyor Belting, Type 50 Air Hose and every other Goodrich product a *better value.* The B. F. Goodrich Company, Mechanical Rubber Goods Division, Akron, Ohio.

Goodrich

ALL *products problems* IN RUBBER

PURCHASING

Established 1915 *as "The Purchasing Agent"*
Consolidated with "The Executive Purchaser"

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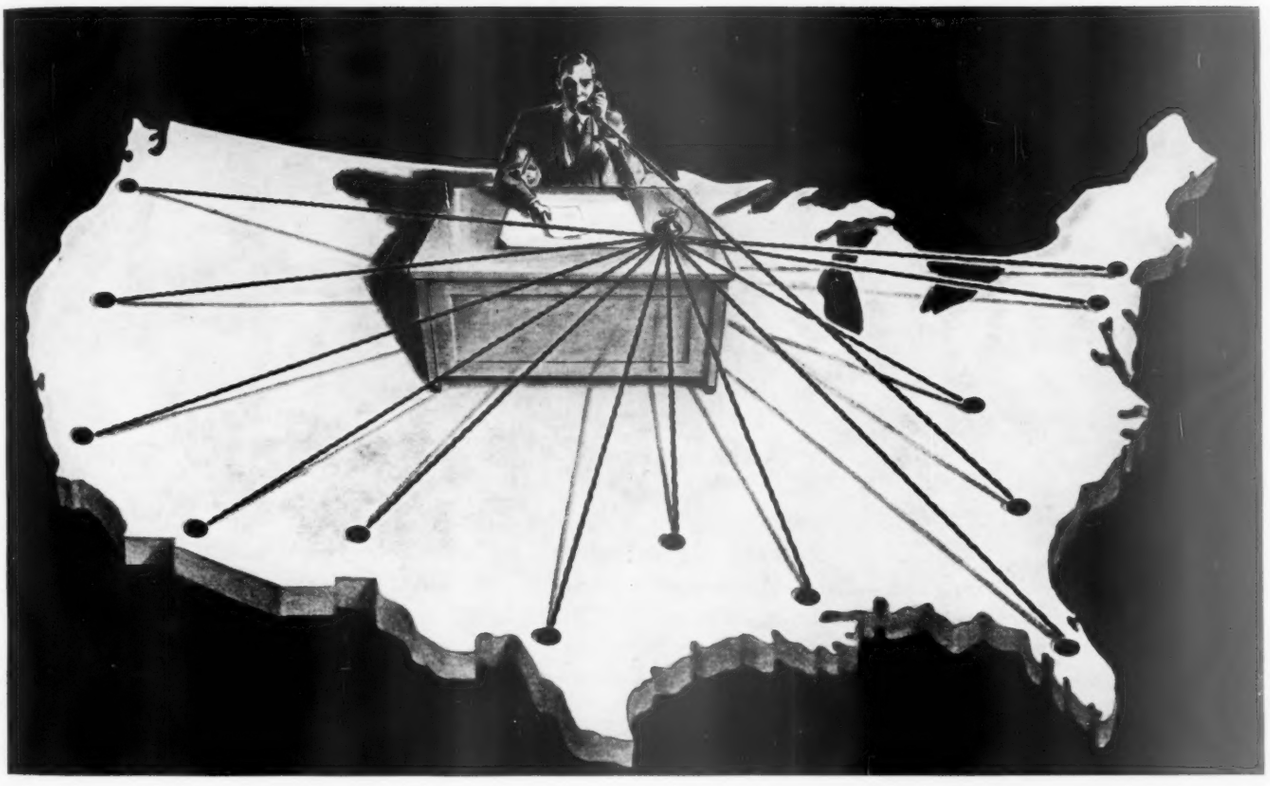
Acceptance under the Act of June 5, 1934, at Easton, Pa., Authorized June 4, 1936

LONG DISTANCE finds 15,000 items fast



THE Purchasing Agents' Association of Philadelphia, Inc., includes more than two hundred purchasing executives of the biggest industries, utilities, banks and insurance companies in that area. Clearing-house for their common problems is the office of Executive Secretary Harold I. Patten, who makes this appraisal of the importance of Long Distance telephone service in Purchasing:

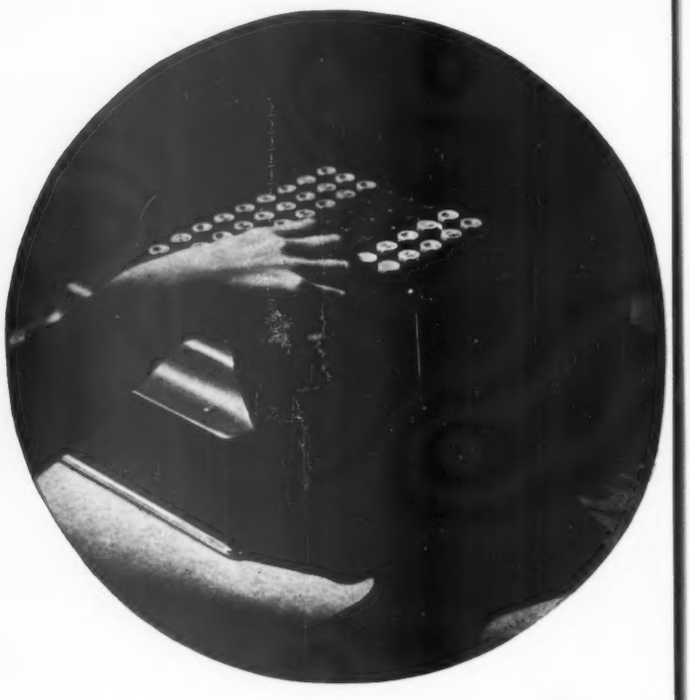
"Some of our members are required to buy as many as 15,000 *different* items. Their sources of supply are located all over the United States. By telephone, they complete transactions in a few hours that would require weeks or months without it.

"Purchasers like Long Distance, too, because it expedites the process of purchasing all along the line — from the first order to final delivery. They can talk *personally* to the men responsible for production — ask questions and get instant answers. The telephone reaches *anywhere* — into the factory, into the freight-yard — and gets a clear picture.

"Business has definitely speeded up to meet unusual demands in the last few years. *Service*-buying is replacing *price*-buying. As the trend continues, purchasing executives will find it increasingly important to conserve their time and energy by frequent use of Long Distance."

Try Long Distance systematically for a week or a month. Prove for yourself *its low ratio of cost to accomplishment.*

How Do You Buy Abrasives?



On the Basis of "Cost per Piece Polished"?

COST Department figures often can tell much about the merits of different brands of abrasive. Many plants are finding, for example, that when figured on the basis of "cost per piece polished" Alundum Abrasive is the most economical grain they can use.

Here are just a few examples from different plants—actual savings shown by cost figures: plows 10%, shovels 21%, bumpers 15%, wringer frames 22½%, hoes 18%, cash register parts 16%, cultivator parts 22%, fenders 34%, ventilator covers 25%.

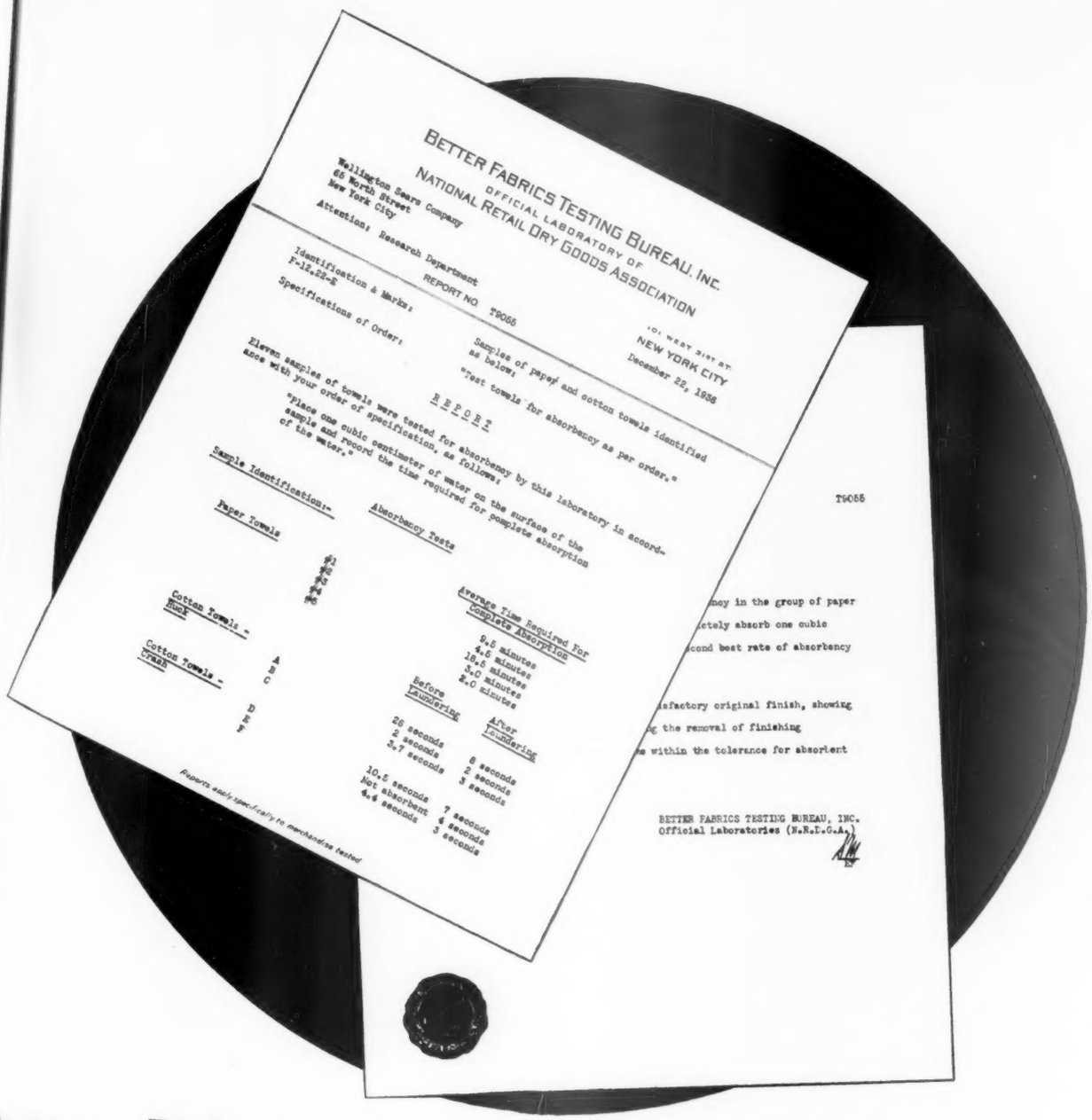
In your plant, too, Alundum Abrasive may be able to show equal or greater savings. Norton engineers will be glad to study your polishing jobs and recommend the sizes and treatments of abrasive most suitable for your work. You'll find these men practical polishers who can be of real help—help that will be reflected in the Cost Department figures.

NORTON COMPANY, WORCESTER, MASS.

New York Chicago Detroit Philadelphia Pittsburgh
Hartford Cleveland Hamilton, Ont. London Paris
Wesseling, Germany Corsico, Italy

G-42

NORTON ABRASIVES



BETTER FABRICS TESTING BUREAU, INC.
OFFICIAL LABORATORY OF
NATIONAL RETAIL DRY GOODS ASSOCIATION

Wellington Sears Company
65 Worth Street
New York City

Attention: Research Department

REPORT NO. T9066

NEW YORK CITY
December 22, 1936

Identification & Marks:
F-12,22-E

Specifications of Order:

Samples of paper and cotton towels identified as below:

"Test towels for absorbency as per order."

REPORT

Eleven samples of towels were tested for absorbency by this laboratory in accordance with your order of specification, as follows:

"Place one cubic centimeter of water on the surface of the sample and record the time required for complete absorption of the water."

T9055

Sample Identifications:-

Absorbency Tests

Average Time Required for Complete Absorption

Paper Towels

#1
#2
#3
#4
#5

6.6 minutes
4.6 minutes
16.6 minutes
3.0 minutes
2.0 minutes

Cotton Towels - Huck

A
B
C

Cotton Towels - Crash

D
E
F

Before Laundering	After Laundering
26 seconds	8 seconds
2 seconds	2 seconds
3.7 seconds	3 seconds
10.5 seconds	7 seconds
Not absorbent	4 seconds
4.4 seconds	3 seconds

...boy in the group of paper
...etely absorb one cubic
...cond best rate of absorbency

...isfactory original finish, showing
...g the removal of finishing
...e within the tolerance for absorbent

BETTER FABRICS TESTING BUREAU, INC.
Official Laboratories (N.R.D.G.A.)

Reports apply specifically to merchandise tested

Better Fabrics Testing Bureau Proves That Cotton Towels Absorb Moisture 20 Times Faster Than Substitutes

THIS report of a recent absorbency test made by the Better Fabrics Testing Bureau provides a technical explanation for the fact that cotton towels are much more satisfactory for drying purposes than substitutes. Because they absorb faster, they dry quicker and much more thoroughly.

When you take into consideration such items as wash room time, litter-stopped drains, number of units required for each drying and extra janitor service, caused by the use of substitutes, the use of cotton towels furnished by your local linen supply dealer on a rental basis is not only far more satisfactory—it is also apt to be less expensive in the long run.

Wellington Sears Company supplies the Famous Fairfax towels and toweling to the linen supply industry. Your local linen supply company can furnish you with freshly laundered, completely sterilized cotton towels on a rental basis. Why not discuss your requirements with his representative? He can demonstrate that cotton towels are 20 to 40 times faster than substitutes, and give much more satisfactory service.

WELLINGTON SEARS COMPANY
65 WORTH STREET NEW YORK, N. Y.

THIS TRADEMARK HAS A BACKGROUND

A McLAURIN-JONES Product
McLAURIN-JONES COMPANY · BROOKFIELD · MASS

BECAUSE

a Scotchman looked ahead

Paper gummed and coated on the roll was unheard of—until Peter McLaurin, four generations ago, had an idea. Since then, a century and more of progress, and McLaurins are still carrying on, with an ear to the ground and an eye to the future, that the old traditions may not fail. Today, as a hundred years ago, McLaurin-Jones papers are accepted as the standard by which all others are judged. Today a technical staff is constantly at work seeking improvements in gumming, printing characteristics and handling qualities. And that is why today the by-word of the industry is "Watch McLaurin-Jones."

100 YEARS OF KNOWING HOW
WITH GUMMED PAPER

Whatever your requirements, in the McLaurin-Jones line there is a gummed paper for you. Unsurpassed surfaces that print beautifully. Whites, brilliant colors, and delicate pastels. Smooth, even, *correct gumming* for sticking to every known surface, and *guaranteed* to lie flat. And cost? No more than ordinary papers. Check with your local paper merchant for samples, prices, and complete information. It *pays* to concentrate on McLaurin-Jones.

Consider, too, these other famous McLaurin-Jones Products:

Ware Coated Papers and Post Cards
Ware Gold and Platinum Papers
Ideal Gummed Hollands
Ideal Photomount
Ideal Head Bands
Ideal Binding Cloth
Ideal Cloth Lined Papers
Ideal Gummed Veneer Tapes
Ware Foils
Ware Box Covering Papers
McLaurin-Jones Guaranteed Flat Gummed Papers
Ideal Gummed Box Stay
Ideal Gummed Cambric Tapes
Blue Star Sealing Tapes

A McLAURIN-JONES Product
McLAURIN-JONES COMPANY · BROOKFIELD · MASS

McLAURIN-JONES COMPANY
BROOKFIELD, MASSACHUSETTS
MILLS AT BROOKFIELD AND WARE ★ OFFICES, NEW YORK · CHICAGO · LOS ANGELES

MAIL

Cartoon Comment

To the Editor:

Have enjoyed reading this magazine, and surely hope that you will continue the cartoons in spite of the fact that some of the boys have criticized them.

S. A. WHITE
Purchasing Agent
The National Refining Co.

Cleveland, Ohio
January 13, 1937

Reader White is hereby assured that the cartoons will be continued as a regular monthly feature.

To the Editor:

The writer got a big kick out of your cartoon that appeared in the February issue of PURCHASING, where the salesman gives the purchasing agent his quota. I am wondering what happened to the original of this cartoon. Would it be possible to secure the original, for framing purposes?

R. W. GREEN
Asst. Sales Manager
The H. D. Lee Mercantile Co.

Trenton, N. J.
February 25, 1937

Entirely possible, Mr. Green. Mr. Sanderson's drawing, having served its original purpose, is sent with our compliments.

Cost of Purchasing

The several correspondents who have requested further and more specific information regarding the cost of purchasing, referred to on page 9 of the February issue, are directed to page 40, where a more detailed description of this calculation of departmental costs is given.

Booklets

The Howard Paper Co., Urbana, Ohio, has issued its 1937 portfolio of Howard Bond, with specimens of actual letterheads and envelopes, showing the six finishes, the exceptionally clear white and fourteen attractive colors which make up the line.

*

Signode Steel Strapping Co., 2600 North Western Avenue, Chicago, has issued a new folder describing a recently developed device for opening and closing car doors quickly and safely. The unit weighs only fifteen pounds, can be used with equal efficiency from platform or ground, and is operated by one man.

They Got it in 20 HOURS!

—THAT'S SCULLY SERVICE!

Sunday, May 3, 1936. A building of the Maywood Chemical Co., Maywood, N. J., was destroyed by fire. Immediate rebuilding essential.

4 P.M. Tuesday, May 5. Otlmer Iron Works, Jersey City, N. J., under contract to rebuild the burned building, phoned an order to the Newark warehouse of Scully Steel Products Co.

"We must have the order in two days," they said.

1 P.M. Wednesday, May 6 . . . the order was delivered. Just 20 hours from the time it was received. And the Maywood Chemical Co. got their building on time.

We take a lot of pride in filling orders on time . . . *ahead* of time when it's possible. We have immense stocks of steel, steel products, copper and brass always on hand in eight warehouses conveniently located.

Phone, write or wire your order

We'll ship it the same day it is received. The right steel for your purpose and no delay . . . that's Scully Service. By striving constantly to serve our customers promptly and intelligently, and by always making good our promises, we have made the phrase, "Scully Service" famous throughout the entire steel world. Try us.

Phone, write or wire the warehouse nearest you. Send for our complete Stock List and Reference Book. It's free.

USS

SCULLY STEEL PRODUCTS CO.

Warehouses at

CHICAGO • BOSTON • PITTSBURGH • NEWARK, N. J. • ST. LOUIS
BALTIMORE • ST. PAUL • CLEVELAND

UNITED STATES STEEL

The SPRING MOOD of a FESTIVE WINTER ...at the RONEY

MIAMI BEACH—weather, Nature, social gaiety—is loveliest right now . . . in the mood of Springtime. All the resort activities are clicking merrily . . . the vacation crowd is in fine fettle . . . and the Roney Plaza is again queen of the season, favorite gathering place of Society-on-a-holiday.

With its acres of beautiful grounds on the oceanfront, the Roney is a self-contained resort offering exclusive facilities and privileges for thorough seaside enjoyment, including private beach, cabaña colony, tennis courts, outdoor swimming pool, sidewalk Cafe de la Paix, outdoor dance floor and palm gardens.

Roney Plaza guests have also membership privileges, upon approval by the membership committee, in three of America's most beautiful sports clubs: Roney Plaza Cabaña Sun Club, Miami Biltmore Country Club and Key Largo Anglers Club.

For "going places"—to every vacation interest in this vast Miami playground—Roney Plaza guests have their own transportation system of commodious aerocar trailers.

Write direct to the hotel for information and reservations . . . or the New York office: 521 Fifth avenue, suite 1238-41 (Telephone MUrray Hill 2-3740) . . . Chicago office: 180 N. Michigan avenue, suite 615.

"AMERICA'S FINEST OCEANFRONT HOTEL"

Roney Plaza

MIAMI BEACH • FLORIDA

RP TRADE 3

Champion coal

"IT'S THE BEST"

There is only one CHAMPION COAL—deep mined, hard structure coal from the famous Pittsburgh Seam . . . mechanically cleaned and refined to meet the most exacting requirements for steam, gas, by-product and domestic purposes. It is low in ash and sulphur, but exceedingly high in heat.

PITTSBURGH COAL COMPANY

General Sales Offices Henry W. Oliver Building, Pittsburgh, Pa.

District Sales Offices

Boston, Mass.
Baltimore, Md.
Buffalo, N. Y.
Cleveland, Ohio
Detroit, Mich.
Erie, Pa.
Hamilton, Ont.
London, Ont.
New York City
Pittsburgh, Pa.
Philadelphia, Pa.
Toronto, Ont.
Sault Ste. Marie, Mich.
Windsor, Ont.
Utica, N. Y.
Youngstown, O.

PITTSBURGH COAL COMPANY OF WISCONSIN

Duluth Superior Minneapolis St. Paul

MILWAUKEE WESTERN FUEL COMPANY

Milwaukee Wisconsin

EFFICIENT BUYING IS THE KEY TO PROFITS

McGill Commodity Service

INCORPORATED

TAYLOR BUILDING
AUBURNDALE, MASSACHUSETTS

WILLIAM P. HELMS
Vice-President

March 10, 1937.

WHAT'S AHEAD FOR COMMODITY PRICES -- NOW?

Because the present commodity price situation is so significant, we have just prepared two critical lists of basic commodities for the guidance of our clients:

(1) A group of 45 commodities that should now be purchased from the standpoint of protection for several months ahead. (INCREASE INVENTORIES BEFORE PRICES ADVANCE)

(2) A list of 17 commodities that should be purchased upon a more conservative basis due to present conditions. (REDUCE INVENTORIES BEFORE PRICES WEAKEN)

For many months we have been insisting that clients judge each individual commodity upon its own merits. Just because the trend of all commodities grouped as a whole seems to be upward or downward is no safe reason why your particular item shall go upward or downward as well.

In fact, we can spot throughout our lists of agricultural, fuel, industrial, textile, building material, or metal commodities many items that move contrary to the general trend of these groups.

To be on the safe side then, particularly in days such as these when developments of real significance are taking place here and abroad, we urge the closest study of each individual commodity based on its own particular set of price-controlling conditions.

We believe that we can be of great help to you just at this point by sending you a copy of these two lists and providing you each month with our regular releases, which analyze all basic commodities and supply price forecasts for each. The price for this significant help from now until October 1, 1937 will be $6 which may be paid upon receipt of our bill if so desired.

All that is necessary now is that you sign and return this notice so that we may forward these highly-important releases at once.

Very truly yours,
McGILL COMMODITY SERVICE, Inc.

Please sign below:

Name _____

St. No. _____

City, State _____

Wm. P. Helms, Vice Pres.

EIGHT REASONS

• Why Purchasers Demand This Label •
• on Every Bale of Wiping Cloths. •

I. INTEGRITY: Every buyer wants to deal with a firm characterized by this intangible but important quality. Firms lacking in **integrity** are not admitted to the Sanitary Institute of America.

II. CORRECT WEIGHT: The Institute label is your guarantee of **correct weight** in dry materials, without excessive tare. The Institute cooperates with city sealers in principal cities to insure effectiveness of this guarantee.

III. EMPLOYEE PROTECTION: Unsterile wiping materials have often been responsible for spreading serious infectious industrial and social diseases. Institute labelled wipers, being thoroughly sterilized, protect employees against contamination from this source.

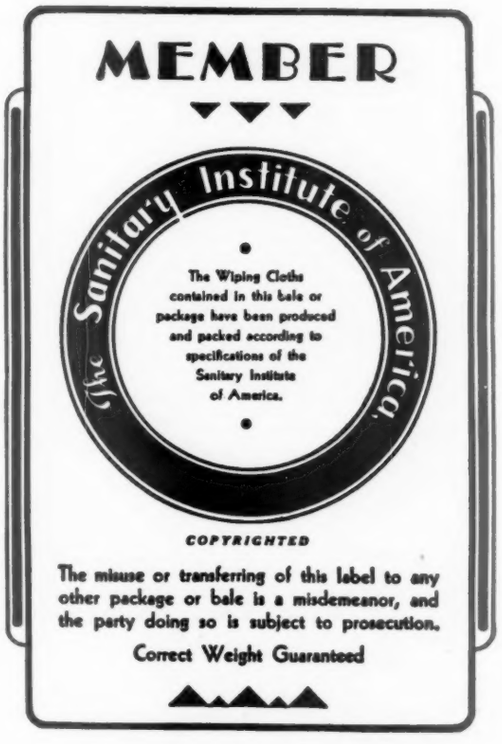
IV. EMPLOYER INSURANCE AGAINST LITIGATION: Many states now, under "Workmen's Industrial Disease" Acts, hold the employer liable in compensation or damages for diseases contracted as the result of contact with deleterious materials while on the job. By providing workers with Institute labelled wipers the employer establishes a good "prima facie" defense to any suit charging negligence in furnishing contaminated wiping materials.

V. MAXIMUM ABSORBENCY: Institute labelled wipers, because they are **sterilized,** provide maximum absorbency. The New York Industrial Commission has estimated a sterilized cloth 15% more absorbent than an unclean one, since "the mesh of the sterilized rag is open and free to absorb a far greater amount of moisture, oil, and dirt than the unwashed piece."

VI. UNIFORM SPECIFICATION PACKING: Products of Institute members are packed in conformance with approved Institute specifications. These specifications set up definite standards, not only for sterilization, but also for texture, color, and dimension (minimum area 2 sq. ft., minimum width 12 in.).

VII. FREE OF FOREIGN MATERIAL: Utmost care is taken to exclude foreign materials such as buttons, hooks and eyes, or anything which migl t scratch or score delicate equipment.

VIII. MADE IN THE U. S. OF AMERICA: The Institute does not "knock" foreign products. But at a time when the prosperity of this country largely depends upon the re-employment of U. S. labor, many purchasers prefer, other things being equal, to buy products of U. S. labor. These purchasers are entitled to know that every cloth in an Institute labelled bale is processed by American labor within the Continental Limits of the U. S. A.


MEMBER
The Sanitary Institute of America
The Wiping Cloths contained in this bale or package have been produced and packed according to specifications of the Sanitary Institute of America.
COPYRIGHTED
The misuse or transferring of this label to any other package or bale is a misdemeanor, and the party doing so is subject to prosecution.
Correct Weight Guaranteed

Demand The Sanitary Institute Label On Every Bale

THIS ADVERTISEMENT SPONSORED BY THE FOLLOWING MEMBERS OF THE SANITARY INSTITUTE OF AMERICA

BROOKLYN—American Sanitary Rag Co., 600 Degraw St.
BROOKLYN—Delia Waste Products Corp., 1557-61 Dean St.
BROOKLYN—Godfrey Cotton Products Corp., 601 Sackett St.
CHICAGO—American Sanitary Rag Co., 1001-15 W. North Ave.
CHICAGO—Central Mills Co., 3920-60 S. Loomis St.
CHICAGO—Chicago Sanitary Rag Co., 2137 S. Loomis St.
CLEVELAND—Manufacturers Supply Co., 3528 East 76th St.
HAMILTON, OHIO—The Leshner Corp., 1240 Central Ave.
KANSAS CITY, MO.—American Wiper & Waste Mills., 511 Broadway
NEWARK, N. J.—American Oil & Supply Co., 238-260 Wilson Ave.
PITTSBURGH—Armstrong Sanitary Wipers Co., 1233 Spring Garden Ave.
PITTSBURGH—Scheinman-Neaman Co., 1024 Vickroy St.
ST. LOUIS—Wiping Materials, Inc., 2000-28 N. Main St.

For complete Institute specifications write any member or The Sanitary Institute of America, 1100 N. LaSalle Street, Chicago

The Key to Immediate Steel

The Ryerson Stock List is your guide to the largest and most diversified stocks of steel in the country. It shows sizes, weights, extras and other information useful to the steel buyer. In it you are sure to find the kind and quality of material best suited to your needs. And the Ryerson organization will cut, form or do whatever is required and deliver the steel and allied products in record time.

There is a special edition for each of the ten Ryerson plants. The book featuring the stocks of our plant nearest you will be mailed shortly. If you do not receive it in a few days, please let us hear from you.

Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cleveland, Detroit, Cincinnati, Buffalo, Boston, Philadelphia, Jersey City.

RYERSON STEEL-SERVICE

Security of Supply

IN an era that has made a fetish of security, officially hedging against such diverse contingencies as old age, unemployment, crop failure, inadequate commodity prices, dissipation of bank deposits, and the like, a most curious attitude has arisen regarding security of supply, that assured flow of necessary materials to keep industry's wheels turning, the most certain way of accomplishing these other objectives in a normal economic process.

Not that the importance of this factor has been overlooked in the general program. On the contrary, it has been recognized and consistently used as a potent lever of industrial coercion. Under the Walsh-Healey Act the government has been willing to jeopardize the security of national defense by insistence on terms of supply. Recent strike strategy of organized labor has been to paralyze a whole industry by cutting off essential supplies at the earlier stages of production.

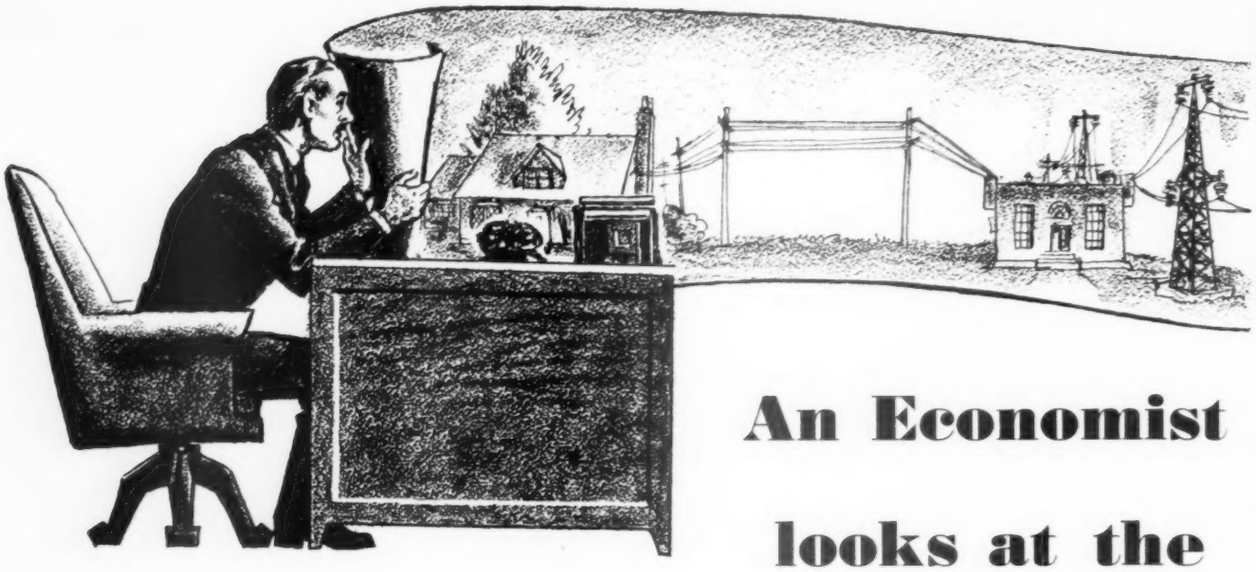
It is worth noting in this connection that the type of industrial organization most vulnerable to such a line of attack is the vertically integrated company, a form of organization which, for better or worse, has subordinated procurement by purchase to procurement by manufacture and has consequently sacrificed the flexibility and assurance that comes with alternative supply sources, intelligently selected and cultivated by a competent purchasing executive.

Security of supply remains distinctly a problem and responsibility of industry's purchasing officers. And it is a responsibility that has been met with notable success in the face of an exceedingly difficult and complicated situation in recent weeks. With production in many fields geared so closely to current demand that spot supplies command price premiums and distributors are carrying on an active trade among each other before passing the materials along into the channels of use, with deliveries hampered by the protracted marine strike and by flood conditions in wide areas, with wage adjustment parleys and production agreements pending in important basic fields, with a rapidly rising price scale, purchasing men have managed to keep the stream of materials flowing evenly into their plants and have refused to be stampeded into the hysteria of boom psychology.

It is true that inventories are widening. That is a wise precaution. It is also true that the ratio of stocks to currently expanded operations shows no such increase as volume statistics alone might indicate. In the recapitulation of operations since the middle of 1936, many firms will find a more favorable rate of stock turnover than for some years past, which is a very healthy condition.

Those who conceive of purchasing as purely a price proposition, and who see a rising market primarily as the opportunity for "inventory profits," will have to revise their thinking in the light of present purchasing policy. Today the first consideration is delivery, not price, and inventory profits are being sought in turnover rather than in market appreciation. That is in tune with modern thought, a program of very real security in the service of supply, and a more sound basis for continuing profitable activity than speculative accumulation would ever provide. Industry has cause to thank its purchasing departments for a prudent, far-sighted and effective buying policy.

STUART F. HEINRITZ, EDITOR



An Economist looks at the Utility Purchasing Problem

I NEVER VIEW the utility industry without a feeling of awe and admiration, at what has been accomplished. The remarkable growth of the industry, the constant reduction in costs, the improvement in service, make this industry outstanding in the annals of our history.

But, in spite of these advances, it must be apparent to you that the public takes for granted whatever you, by dint of hard work, have achieved. The public looks upon your achievements as its rightful heritage, and demands that you continue in your march toward better service at lower costs. It apparently is in agreement with the philosopher who used to say, "When you have achieved anything, don't stand around to await praise; get out of the way to avoid the kicks."

It is this attitude on the part of the public, this ever-present demand for lower rates and better service that makes it necessary to review and analyze the trend which the industry is likely to take.

There are eight significant trends in the industry which affect you either directly or indirectly. These trends are so interwoven that any failure to appreciate any one of them may prevent you from solving the general problems which confront the industry. These trends are:

(1) The electric industry stands at the very threshold of a new expansion period. If we may believe our more optimistic prophets, we may be forced to double plant capacity within the next decade.

(2) It is apparent that you will be forced to purchase this equipment in a market characterized pretty generally by rising prices. Whether your portion of the costs of the service will rise faster or slower than the general rise in costs will depend on your ingenuity in purchasing, plus technological advances. We may rest assured, however, that operating expenses will increase.

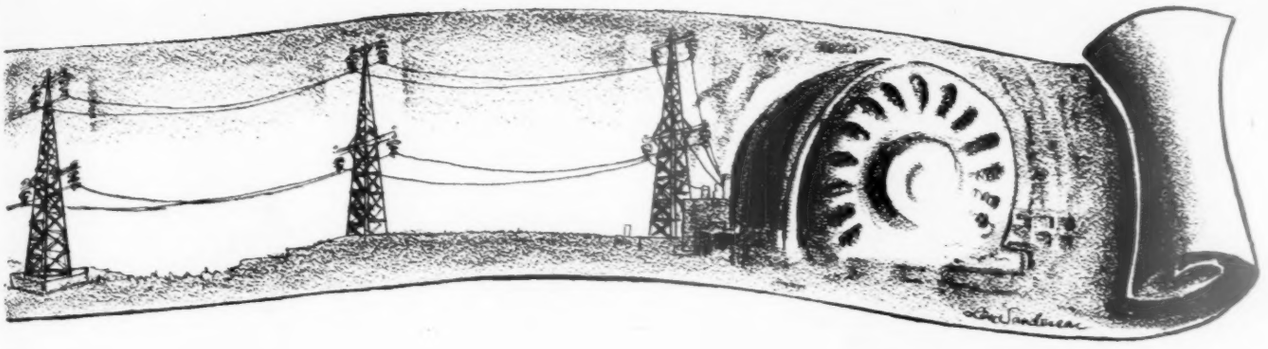
(3) With an increase in operating expenses, economies must be secured in the capital side of the industry. Failure to secure such economies will mean that the investment per kilowatt of capacity or per kilowatt-hour of output may increase. This automatically saddles upon the industry new annual costs. Since you are concerned with the capital side of the industry, in the face of rising prices this problem will be placed in your hands for solution.

(4) If the amount of capital per kilowatt of capacity increases, the rate of capital turnover is likely to increase also, and any increase in this rate makes capital costs a still greater burden. Thus any increase of capital per kilowatt of capacity tends not only to affect capital costs in the first instance, but tends to have a cumulative effect.

MYRON H. UMBREIT

Professor of Economics
Northwestern University

Abstract of an address before the Public Utility Group, N.A.P.A., at the midwinter conference, Feb. 5th



(5) As operating costs go up the operating ratio tends to increase, and this means that operating expenses tend to take a greater share of the operating revenue: hence less is available for a return on capital. While the electric industry is proud of its operating ratio of approximately 40%, there is little likelihood that this ratio can be held at this figure in the near future.

(6) The industry has been able to maintain its capital position because new capital is being obtained in a very favorable capital market, a market in which rates are very low. Many utilities have been able to refund outstanding capital issues at very substantial savings, and this has put the industry in a very favorable position. Predictions are now being made that the interest rate will increase in the near future; but if it does not, you may rest assured that governmental agencies will see to it that the utilities accept a lower rate of return. Hence any gain by this means is temporary.

Before we proceed to point seven, an explanatory word or two is in order. In the first six points we have been concerned with the production side of the industry. But the term cost has many different meanings, especially when we speak of total costs. The accountant, for instance would never consider dividends as a necessary cost. At other points this problem of costs is also confusing. In order to make my position clear, when I use the term cost I shall be referring to all the sacrifices which have been undergone to produce and market the product. Further, in the allocation of costs I shall assume that the owners of capital are the residual participants, that they get what is left. In periods of prosperity this may be great, in periods of depression, small. In any case, since the owners of capital are residual claimants, any factors which tend to affect the cost of production will ultimately affect the flow of capital into the industry. I have tried to point out the factors which may influence the cost side of the industry. I now want to turn to the income side of the industry, for no matter what trend costs are taking, they may be offset by revenues. Hence we must think of revenues as well as costs.

(7) While costs may be on the increase in the industry, the demand is ever present that rates be decreased. Two reasons for such a decrease are apparent: first, public officials are asserting that the electric industry is still over-charging the public. Recently one such official estimated that the overcharge last year was at least four hundred million dollars. Such statements are not uncommon in these days of yardstick regulation. The public as a result has come to expect lower rates, and the industry may expect that the vertical reductions which have taken place during the last few years will continue. Besides, high rate first blocks in the domestic rate structure are being abolished. Secondly, and more important, much of the new business which the industry will get will lie in the highly competitive field, and will be secured only if very low prices are quoted. Whether this business is worth while, especially if new plants must be built to take care of these new loads, remains to be seen.

(8) It follows, that as new plants are built to take care of these new loads, in this highly competitive field, the industry's rate structure, and the gross and operating revenues will be vitally affected. Competition, moreover, changes the depreciation and obsolescence policies of the industry, which heretofore has adopted the monopolistic point of view in this respect.

If these trends accurately describe the direction in which the electric industry is moving, the more basic problems which you must face are evident. You are going to be required to buy hundreds of millions of dollars worth of equipment in a market characterized by a rising price level, and at the same time you will be asked to purchase in such a way and under such conditions that the product may be sold at lower rates. You are being asked to continue to achieve those economies which have been so brilliant in the past, but under conditions that demand that you consider price as primary, and to reduce costs to meet the price of the ultimate service, rather than, as you have in the past, reduced cost and then price. In this respect, therefore, your position is radically changed.

One of the most significant trends in the industry is the recent tendency of the total investment per kilowatt of capacity to increase. Since kilowatt of capacity determines the limit of the output, and since revenues are based on output, this manner of determining investment is justifiable.

This rise in investment per kilowatt of capacity is due primarily to the tremendous new investment in distribution and transmission systems. Almost 70% of the new capital since 1932 has been invested in

this type of equipment. It is expected that a better balance will soon be secured, but with competition between the industry and the government in rural electrification, distribution and transmission costs will tend to remain relatively large in proportion to investment in generating equipment. During 1936 the industry spent $58,000,000 for new generating equipment, or about $95 per kilowatt of capacity However, it also spent $250,000,000 for distribution and transmission lines. It is not correct procedure to allocate all of this latter investment to the amount of capacity added, hence in order to secure total investment per kilowatt of capacity we must compare the total investment in the industry to the total capacity. Depending upon the data used, the average investment was somewhere between $360 and $380 per kilowatt of capacity in 1936. In other words, investment in transmission and distribution systems was almost three times as large, on the average, as investment in generating equipment. Unless a condition can be produced which will reverse or offset this increase in investment, the industry may find itself in an unfortunate position.

I do not wish to infer that forces are not at work to change this trend: you may be aware of many such forces. However, when a problem confronts an industry, emphasis should always be directed toward the unfavorable aspects of the situation. Every industry has its quota of pollyannas who maintain that everything will turn out all right, but industry does not solve its problems by such happy dispositions and attitudes. Someone is required to do some pretty straight thinking and you stand in a position where you are forced to bear this burden.

Our next step should be to determine the significance of capital cost to total costs. This may best be accomplished by the use of an illustration. Suppose we take a million dollar plant, with a capital turnover of once in five years and an operating ratio of 40%. Under our conditions the gross revenue will be $200,000, the operating expenses $80,000, leaving $120,000 for interest, dividends, depreciation and surplus. This return of 12% may be ample for the industry, though an ample return has often been considered to be more than this figure.

Suppose, however that certain conditions change: costs are increased and rates decreased. Suppose further that by 1947 the capital turnover, due to the above factors, is only once in eight years. This would mean that the gross revenue per million dollars of investment would be only $125,000. If operating expenses remained as before at $80,000, this would leave a residue of only $45,000 to pay capital costs. Clearly this return is inadequate. Remember also that capital is the most liquid of all of the factors of production, and it will flow away from any industry which fails to reward it adequately. Thus we must protect capital income.

It is apparent that if investment trends continue, capital turnover and operating ratios will increase. Even in 1935 the capital turnover ratio for the entire industry was once in seven years. The operating ratio, however, did not increase, due largely to the fact that the full force of taxes, wages, and rising prices had not as yet affected the industry, and also because the industry still had excess capacity and could thus increase its revenue without appreciably increasing costs. By 1936, however, operating expenses increased 11% while revenue increased only 7.6%. This indicates the direction in which these costs are moving.

Any industry can remain in a favorable financial position either if it can reduce its cost of production and retain its revenue, or reduce its costs of production faster than revenue decreases, or increase its revenue at a faster rate than its costs increase. In the electric industry in the face of rising prices, what does the revenue side of the picture indicate? Many utility spokesmen seem to infer, and many public officials maintain, that if only enough electricity is used it may be sold at ridiculously low rates. During the last few years utility operators with excess capacity, or in the hope of building up their load factors, have tended to go after business irrespective of costs. How long such tactics will benefit the industry remains to be determined, but they tend to mislead the public as to the actual cost of electricity, and hold out the hope that still cheaper rates can be obtained. Further they distort the picture for those of you who are required to purchase new equipment for enlarged capacity.

If we look at the picture of rate trends over a longer period, we find some very significant figures. A comparison of the industrial load between 1929 and 1936 shows that while in 1929 industrial users consumed forty-four billion kilowatt hours of energy, they consumed forty-nine billions in 1936. For this five billion kilowatt hours energy, the industry actually received a total of thirteen million dollars less than was received in 1929. Can this achievement be continued in the face of rising prices?

If we turn to the domestic consumer, we find a little better picture from the point of view of revenues. The total revenues received in 1936 were an increase over the 1929 figure of about one hundred and nine million dollars. Still, the domestic consumer received over five and a half billion kilowatt hours of energy for his added expenditure. In other words, the utilities sold the entire excess at a rate of about two cents per kilowatt hour. What will happen to the industry if the demand arises that all of it be sold for this figure, for are we not tending more and more in the direction of this rate?

A writer in *The Electrical World* senses the significance of this condition. He states, "There may be food for thought in the observation that the average customer, nonexistent though he is, purchased forty-seven more kilowatt hours in 1936 (than in 1935) and paid only forty-three cents more for them. One way to look at the proposition would be to say that the new domestic load brought in only 9.15 mills per kilowatt hour." This

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SILHOUETTE STUDIES

12: Thomas Williams Harris, Jr.

FOR A CONSIDERABLE sector of the American business community, coal is certainly the most universal, and perhaps the most important, single item of purchase. Coal is also conspicuous as one commodity market in which buyer and seller relationships have come to be characterized by an exceptionally keen mutual understanding and appreciation of the respective problems of producer, distributor, and user. For years, operators and buyers have accepted and sponsored the same standard contract form, worked together to improve combustion methods and results, and to correlate the consumers' use classification of fuels with the geologists' technical classification. Seeking an explanation for this highly desirable and effective cooperation, an inquirer would get the same answer from coal men and purchasing agents alike—Tom Harris of Dupont.

Harris himself, with characteristic modesty, would regard this answer as gross overstatement. To be sure, he has been deeply interested and active in the work for more than a dozen years, but he regards that as largely a matter of circumstance attributable to the fact that he happened to be a trained engineer, with a background of practical works experience in combustion, before he came into purchasing in 1915, thus speaking the language of both buyer and technical man; and further because Mark Kuehn of Cleveland happened to retire from the chairmanship of the National Coal Committee just about the time that he was breaking in.

But the success of this far-sighted program cannot be explained without due regard for his own thorough scholarship and practical knowledge; his friendly, engaging personality; his capacity for hard work and talent for organization; the enthusiasm and conviction with which he has supported operators in basing their sales effort on sound engineering recommendations, and has educated buyers to an appreciation of quality characteristics in the selection of fuels. It is no mere circumstance that the name of Harris comes first to mind whenever either group is looking for an outstanding discussion leader on fuel problems or that his signature is appended to the N.A.P.A. booklet on "Factors Recommended for Consideration in the Selection of Coal," issued last December—a report sponsored by the American Society for Testing Materials, and regarded as the authoritative manual on the subject.

THOMAS WILLIAMS HARRIS, JR., was born in Philadelphia on March 21, 1891. His grandfather had been a prosperous English sugar planter of Barbados. At the close of the American Civil War, the news of racial emancipation spread like a flame among the native population of the islands and the United States seemed to them indeed like the Promised Land. A great wave of emigration ensued, and in an incredibly short time the Barbados plantations were depleted of essential native labor. Unable to stem the exodus, or to work his plantation under the circumstances, there was nothing for the planter to do but abandon his lands and machinery, and seek his fortunes, too, in a new environment. Regretfully he left the pleasant estate "Quintynnes," and brought his family to Philadelphia. On his mother's side, Harris' ancestry is of old Quaker stock, directly traceable back to the personal associates of William Penn.

Tom attended the Philadelphia public schools and went on to take the course in mechanical engineering at Pennsylvania State College, where he graduated with honors in 1913. He earned a substantial share of his college expenses, and in his Senior year taught classes in Thermodynamics and Kinematics. Meanwhile he was active in campus affairs, played varsity tennis and managed the team for two years, joined Sigma Nu fraternity, and made the Senior honorary society.

Upon his graduation he became Assistant Works Steam Engineer for the East Pittsburgh plant of the Westinghouse Electric & Manufacturing Company and continued his studies in evening classes at the University of Pittsburgh, all the while gathering material for his thesis on "Combustion" which eventually led to the degree of M.E. from Penn State in 1917.

In August, 1915, he joined the purchasing department of E. I. duPont de Nemours & Company at Wilmington, as a buyer of mechanical equipment under Division Purchasing Agent D. D. Ranken. He advanced steadily in the organization, and about a dozen years ago he was appointed Division Purchasing Agent for equipment and supplies, supervising the purchase of all fuel and petroleum products, engineering department equipment, and construction and mill supplies. Today he heads a staff of eleven buyers in this important Division.

HE JOINED THE Purchasing Agents Association at the time of the Philadelphia Convention in 1919. Ranken was then national president, and encouraged the participation of his associates in association work—a policy which is still characteristic of the Dupont organization. With the exception of one term as National Director, Harris has held no office in the local group at Philadelphia, for the very good reason that he was promptly drafted for service on national committees.

When he succeeded to the chairmanship of the Coal Committee, the

standard contract had already been drawn up and approved, but the major job of promoting its general acceptance and use still remained to be accomplished. Similarly, the monthly reports of coal stocks had already given evidence of their value, but required a good deal of development in order to realize their maximum usefulness. Under Harris' leadership both of these objectives were attained. The importance of the coal statistics was recognized to the extent that the U. S. Bureau of Mines has incorporated these figures in their official studies, and the report today is probably unique in that an accredited government report is issued in combination with independent Association statistics.

For ten years Harris has represented purchasing agents on the Coal Classification Committee of the American Standards Association, serving as vice chairman of the Technical Committee and more recently as chairman of Subcommittee VI, charged with the correlation of technical and use classifications. In this connection he has been called upon to address such representative bodies as the National Coal Association and the Engineering Section of Appalachian Coals, besides directing the coal sessions at the annual N.A.P.A. conventions.

ALL OF THIS accomplishment, however, represents only one phase of a many-sided service record. For two years Harris was a member of the National Executive Committee, as Vice President for District No. 8. During his term of office he served as financial officer of the Association, and was an able lieutenant to President Lewis A. Jones in the bitter but successful campaign for higher national dues, that is now recognized as having established the true national character and prestige of the Association at a time when it threatened to degenerate into a loose federation of small sectional units, and provided the necessary foundation for its subsequent expansion of service activities.

Harris was also instrumental in drawing up the Standard Conveyor Contract which is accepted and used today in that important equipment field. The ethical code of purchasing was prompted by his suggestion.

At the Grand Rapids convention, he came armed with an ambitious program for association progress, which was naturally conceived from the viewpoint of eastern industry. There he met, for the first time, a purchasing man from the middle west, who was also chock full of ideas, reflecting the somewhat different viewpoint prevailing in that section. They sat down together and talked things over, reconciling their views and building a truly national program which has been largely influential in directing association effort and development. An indirect result of that conference appeared in 1928, when Harris served with Jones and Boffey on an important committee to select a new Executive Secretary and reorganize the headquarters staff of N.A.P.A. The ultimate choice of that committee was none other than the man whose views and ability he had come to respect in the Grand Rapids conference—George Renard of St. Louis.

TOM HARRIS HAS found life good, and worth living to the full. The business ability and success which his associates in purchasing know and admire are paralleled in his other fields of interest. An athlete of more than ordinary ability, he continued playing tournament tennis until a few years ago, his most prized trophy proclaiming him as singles champion of Eastern New Jersey. Latterly he has turned to squash and golf for active sports participation, but for twelve years he has been president of the Delaware Lawn Tennis Association,

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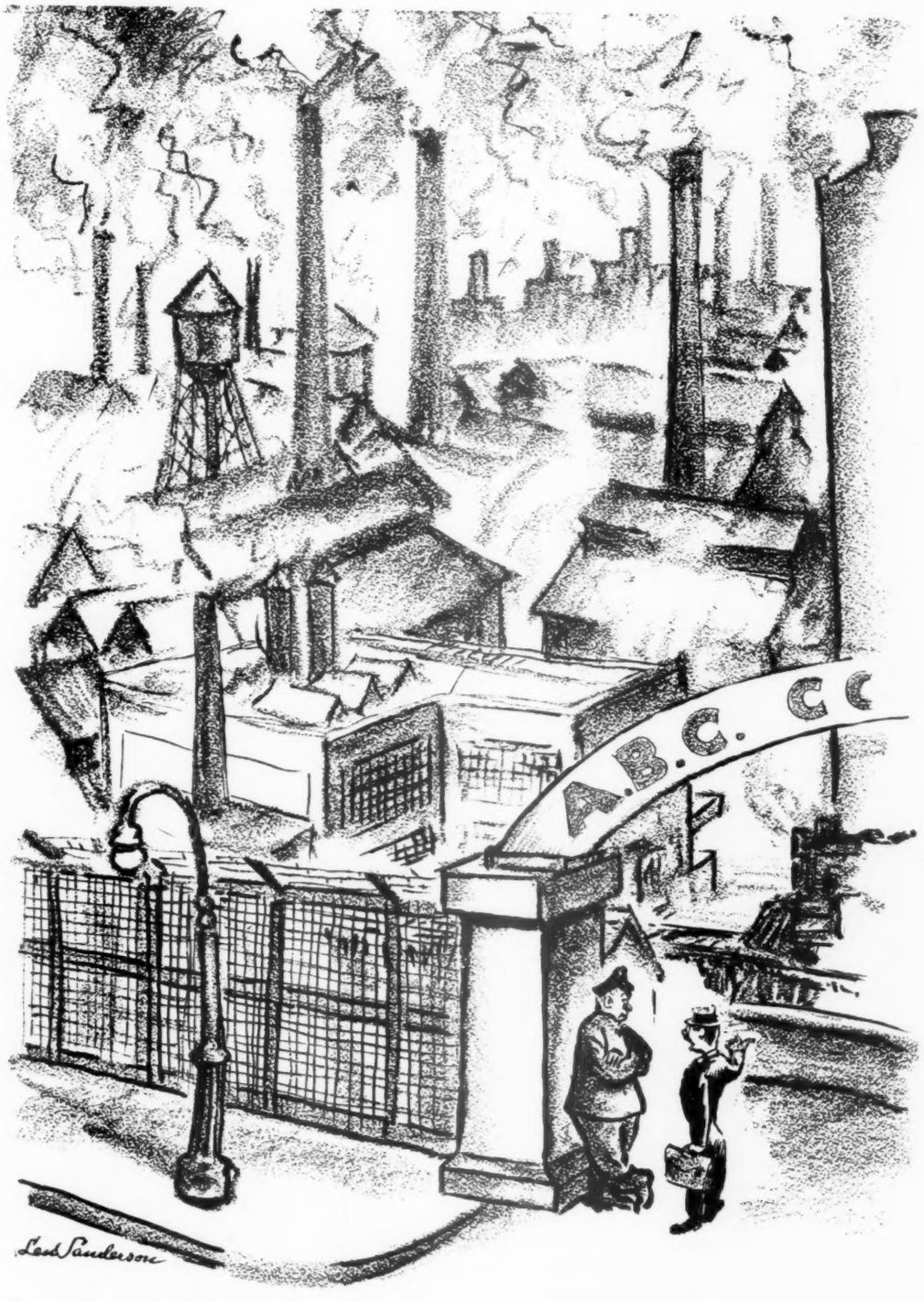

Gateman: *"Whaddya mean, you want to inspect the plant?"*
Visiting P.A.: *"I mean to satisfy myself that this company is capable of delivering a whole carload in case I decide to place the order."*

Pick-up and Delivery Service

Abstract of an address before the Public Utility Group, N.A.P.A., at the mid-winter conference, Feb. 5th

FRED CARPI

General Freight Agent
Pennsylvania Railroad

PICK-UP AND DELIVERY as applied in conjunction with rail transportation means assumption by the railroads of full responsibility for the handling of merchandise traffic from the premises of the consignor to those of the consignee.

This is distinguished from the previous methods of railroads in transporting only from freight station to freight station. The moving of the freight from the shipper's door to the railroad terminal and from the railroad terminal to the consignee's door was left to the patrons. These essential functions, certainly a part of transportation, did not seem to concern the railroads. Among countless shippers and students of transportation there has long been a wide spread belief that the complete transportation should be under the control of the line haul carrier and that shippers and consignees should not be required to make separate arrangements for terminal services. The requirement that shippers and receivers arrange for drayage tended to retard movement of the freight, created divided responsibility, and unnecessarily increased the expense. Under the former methods, when the freight arrived at destination, the railroad mailed an arrival notice to the consignee. This usually resulted in a delay of twenty-four hours. Quite often, if the consignee employed a local drayman, there was a further delay. Many instances can be cited where it took longer and cost more to move the freight from the freight station to the consignee's door than for the line haul movement over the railroad. Today the freight is delivered to the consignee's door on the morning of arrival.

Pick-up and delivery by railroads today is but a revival of similar arrangements in effect years ago. The Third Annual Report of the Interstate Commerce Commission issued in 1889 mentioned the fact that there were sixty-five railroads performing pick-up and delivery service at different points in the United States. It was performed by the Pennsylvania Railroad as early as 1863, and it was very crude, slow and expensive. One can readily appreciate that before the advent of the motor truck, pick-up and delivery was not the thing as we know it today. The Pennsylvania Railroad offered store door delivery in Washington as late as 1912. A receiver of merchandise beyond the delivery limits complained to the Interstate Commerce Commission that discrimination existed because other merchants had the service. The Commission required in effect that either the service be accorded to the complainant or discontinued altogether. The railroads followed the latter course because it was very expensive to make deliveries by horse drays. Since they had no serious competition in line haul transportation at the time they thought it was the proper course. The public had to be satisfied with incomplete service because it was then the best available. Practically all railroads had abandoned pick-up and delivery service prior to the World War.

Just when they had decided that it was not the thing to do, the motor truck appeared on the field and the transportation picture began to undergo remarkable changes. The scarcity of transportation during the War and post-war periods resulted in what many believed to be a greater than normal development of the motor truck which, after posing as a substitute for the horse and wagon for a short while, soon took to the highways in competition with line haul transportation by railroads and water lines and gave the public a door-to-door service which the railroads for one reason or another did not do. Is it any wonder that the motor truck became a favorite child?

Railroad management quickly recognized the economic and flexible aspects of the motor truck in certain fields and experiments were started as early as 1923 by substituting trucks for expensive way train service. It was then predicted that the railroads would have to provide pick-up and delivery service if they hoped to retain their merchandise traffic.

While the subject was being debated over a period of years, the merchandise traffic of the railroads kept drifting away. For ten straight years, 1923 to 1932, the less carload traffic of the Pennsylvania Railroad showed a downward trend, the tonnage dropping from 6,071,306 tons in 1923 to 1,689,209 in 1932. The picture for the railroad industry as a whole showed a similar trend, the tonnage dropping from 53,202,296 in 1920 to 14,036,154 in 1933, or a drop of seventy-four percent. To use a common expression, "the bottom fell out".

In 1932, the Pennsylvania Railroad began experimenting with pick-up and delivery at different sections of the line. The results left no doubt as to the proper course and late in 1933 a system-wide service was inaugurated. It should be stated that merchandise traffic of the railroads in 1933 was under that of 1932, indicating the continuance of the unfavorable trend. With the establishment of pick-up and delivery on a system-wide basis, the showing of the Pennsylvania Railroad immediately reversed. For 1934, the first full year of operation, a modest increase was experienced. This favorable trend continued through 1935.

The plan made effective in 1933 provided for pick-up and delivery at no charge above the station-to-station rates for local hauls of 260 miles or less. For local hauls over 260 miles, and generally on joint hauls, that is traffic from one railroad to another, a charge was made in addition to the station-to-station rates.

Our experience during 1934 and 1935 indicated that while we had made a good showing, much more would have to be done to regain the ground lost in the past decade. The principal obstacle was the imposition of a plus or extra charge above the station-to-station rates. Incidentally, the Southern and Western lines had found plus charges a serious drawback under substantially similar conditions. The public was price conscious, and in any event extras are always distasteful.

This culminated in the decision by all carriers East of the Rocky Mountains, late in 1935, to establish so-called free pick-up or delivery regardless of origin or destination.

The Southern and Western roads made their tariffs effective in the early part of 1936. Because of protests of truckers, the tariffs of the Eastern lines were suspended and extensive hearings were held by the Interstate Commerce Commission. The truckers, in the main, contended that the railroads had no right to offer the public a complete service, and in any event, should charge extra for pick-up and delivery if their view was not sustained. The real issue, however, lay deeper. It was the fear that with coordination of rail and truck, each in its most economical sphere, the recognized responsibility and reliability of the railroads would be preferred by the public. The Commission finally gave a decision sustaining pick-up and delivery service. The tariffs of the Eastern lines became effective on November 16, 1936.

The merchandise traffic of the Pennsylvania Railroad constitutes less than two percent of the total. To give you an idea of its importance the revenue in 1928 was $50,000,000 and in the low year of 1933 was slightly over $22,000,000. For all of the carriers in the United States as a whole, it was $512,000,000 in 1928 and $228,000,000 in 1933. Through our restricted pick-up and delivery service as in effect from 1934 to November, 1936, we succeeded in bringing the revenues up from $22,000,000 to $30,000,000 a year.

In December, 1933, the first month the service was offered by the Pennsylvania Railroad, 49,000 shipments were accorded the service. Each month since then has shown a substantial increase. In October, 1934, we handled 307,655 shipments; in October, 1935, 422,876, and in October, 1936, 527,302.

This growth has been encouraging. It has convinced us that the public will support the railroads if they are prepared to modernize their service. Many shippers, large and

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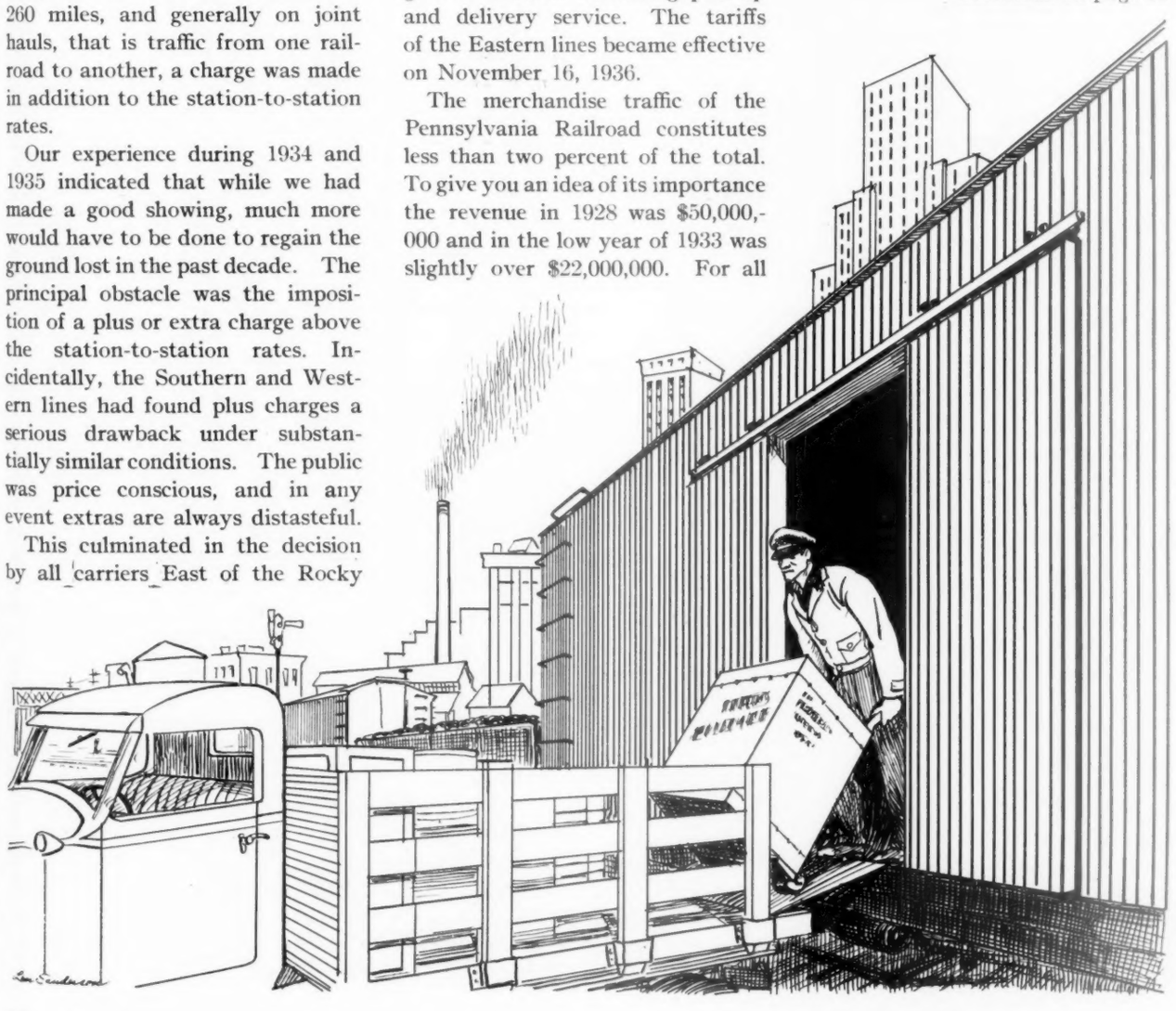


Purchasing Department Procedure

A simple and effective method of requisition and purchase, as described at the midwinter conference of the Public Utility Group, N.A.P.A.

THOMAS R. HARBER
Purchasing Agent
Kansas City Power & Light Co.

HARDLY ANY TWO purchasing departments are identical in their set-up and working arrangements. No one system or procedure can be set up as an ideal or an absolute standard, as every properly functioning department is ideal with respect to the organization of which it is a part. Nevertheless, it has been my experience many times that by finding out how some one else handles the job, I have picked up ideas, systems, short cuts, etc., not new perhaps, but new to me, which would fit into my program to advantage and without disturbing my general set-up in the least.

The Purchasing Department of our Company, with but one exception, is confined literally to purchasing—the exception being that it handles all freight traffic and audits both fuel and freight accounts. Inasmuch as (with the foregoing exception) it has nothing to do with stores or store accounting, checking of invoices, inspecting and testing materials, and other activities common to many purchasing departments, its personnel is small.

Our force consists of two buyers, one order typist, one clerk, one stenographer who is also the Purchasing Agent's secretary, one traffic manager who is also fuel agent, his assistant and his stenographer. This group is headed by the Purchasing Agent, who reports directly to the President. Such a set-up in a company as large as ours may seem rather odd, but it works, and works well, thanks to the 100% cooperation of all other departments and the conscientious attention they give to those details which in other organizations are considered purchasing department functions.

Our purchase requisition consists of an original and three copies. It is padded in sets of twenty-five, serially numbered, and distributed to all departments. It may originate in the Stores Department for stock requirements, or it may originate in any other department for the purchase of items not carried in stock or for materials to be delivered and charged to a specific undertaking.

The upper two-thirds is identical on all copies with the exception of the last two columns. Spaces are arranged for date, the department originating, a definition of use, the delivery point, date material will be required, and the name of the maker of the requisition. The body of the requisition is arranged for listing quantities of described items, charge accounts, quantities on hand and on order, quantities used during the past six months together with space on the original in which the Purchasing Department records the vendor from whom the item shown is purchased and the order number. Next the body of the form on the original are signature spaces for various approvals required and under these a space for remarks, addenda, etc. If alterations are made, such alterations are to be initialed, dated, and cause stated.

When the requisition is approved by the department head, the original and duplicate are sent to those who must also approve and are kept together until the charge account is checked and approved. Here the original proceeds to the Purchasing Agent and the duplicate to the Stores Auditing Department, which department checks against the purchase orders as written as an independent check to insure accuracy and also to eliminate instances where materials carried in stock should be supplied. The receipt of the original in the Purchasing Department is its authority to consummate the proper transaction. The quadruplicate is retained by the maker of the requisition for his record.

As soon as the requisition is written, and without waiting for approvals of the original, the triplicate is sent to the Purchasing Department. This is the Purchasing Department's work sheet and is also advance information that a purchase is to be made. Immediately on receipt of this copy, the Purchasing Department initiates its inquiries and research to determine the proper supplier and considerable time is saved as frequently, because of delays due to absence of those who must approve the original, the Purchasing Department is ready to write an order as soon as the original is received. The triplicate copy of the requisition also serves as a check to overcome delay or uncover loss of the original as, if the approved copy of the requisition is not received within a reasonable time after the triplicate is received, an inquiry is instituted.

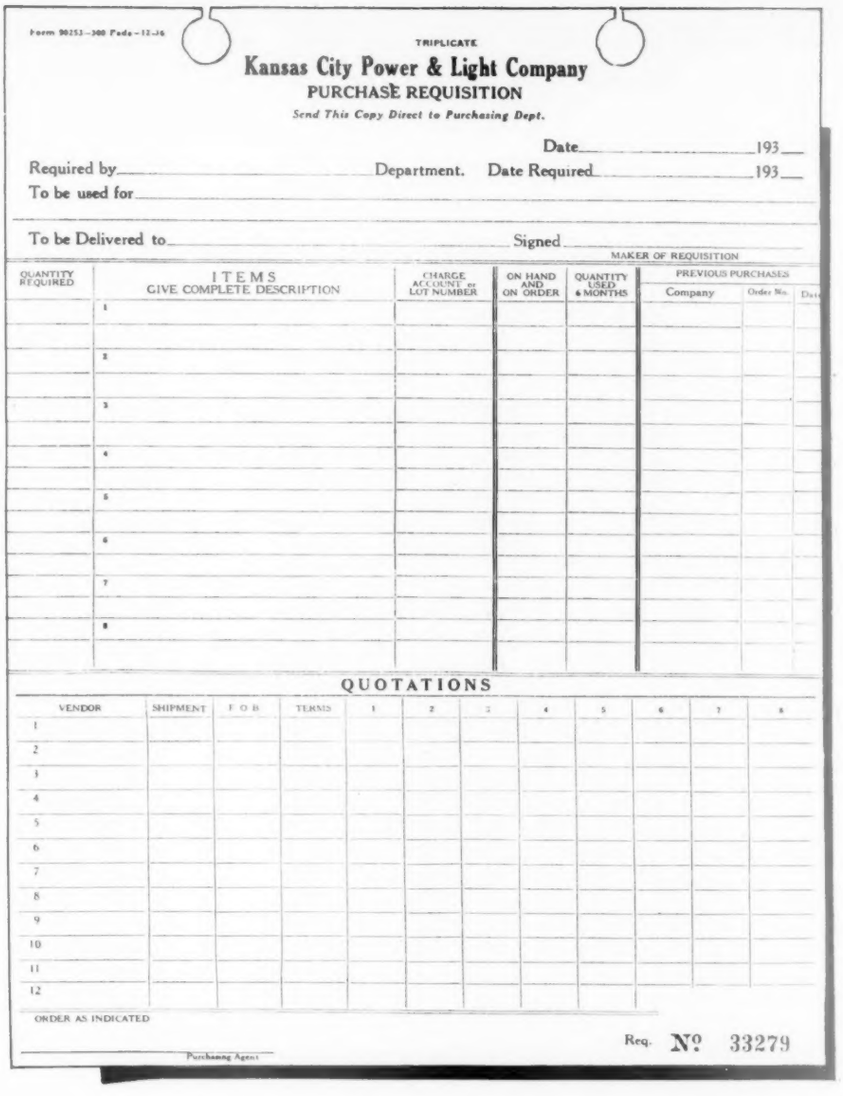
The body of the requisition is numbered from 1 to 8, skipping every other line, and makers are requested to write not more than one item to two lines. The item numbers then match up with the columns on the bottom of the triplicate which simplifies recording competitive prices and this section of the triplicate then becomes a simple recapitulation.

Columns on the right side of the body of the triplicate provide information for the buyer as to past purchases. The back is provided with spaces for recording the name of vendor's representative, method of quoting and date of quotation. When the Purchasing Department receives the original it is matched with the triplicate, attention being given to changes or supplemental instructions, and as soon as the proper supplier is determined, the order is placed. When the approved or original copy is matched with the triplicate or work copy, the lower part of the original which contains the approvals is folded under, which facilitates the work of completing the recapitulation and in copying to the purchase order. The buyer indicates which vendor is to receive the order by a symbol on the recapitulation in the lower part of the triplicate, upon which the requisition is given to the order typist. After the purchase orders are written and checked, the two copies of the requisition remaining together are filed numerically. While it is not imperative, we ask that whenever possible the requisition be typewritten.

Owing to the fact our stores stock consists of approximately 40,000 items, it is impossible for any one to memorize all of them. In order to avoid a deluge of purchase requisitions for items in stock which are disbursed on a different form of requisition, every department is supplied with a copy of our stock catalog (a loose leaf book, to facilitate changes) the materials being classified in such a manner that those items commonly used in each division of our work are segregated, and those common to all or many divisions listed under a general classification. Reference to the catalog discloses whether the department needing material makes its requisition on the Stores Department or on the Purchasing Department.

We have now traced our requisition to the point where it has served its full purpose, so I will proceed with a description of the purchase order.

We use what is commonly called a "snap out" or one-time carbon



Form 90253—300 Pads—12-36

TRIPLICATE

Kansas City Power & Light Company

PURCHASE REQUISITION

Send This Copy Direct to Purchasing Dept.

Date_____ 193__

Required by_____ Department. Date Required_____ 193__

To be used for_____

To be Delivered to_____ Signed_____

MAKER OF REQUISITION

QUANTITY REQUIRED	ITEMS GIVE COMPLETE DESCRIPTION	CHARGE ACCOUNT or LOT NUMBER	ON HAND AND ON ORDER	QUANTITY USED 6 MONTHS	PREVIOUS PURCHASES Company	Order No.	Date
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						

QUOTATIONS

VENDOR	SHIPMENT	F. O. B.	TERMS	1	2	3	4	5	6	7	8
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

ORDER AS INDICATED

Purchasing Agent

Req. No. 33279

The triplicate of the requisition is the Purchasing Department's work sheet

form. This method has been introduced in our system only recently and, therefore, we are unable to say positively it will prove up to expectations, but so far we have not encountered any difficulties. We believe it has two outstanding advantages. First, it may be used on any standard typewriter which certainly is the zenith of flexibility. Second, all copies are securely held in register until ready for separation. Because our order form consists of eight copies it is typed on an Electromatic typewriter as this machine produces uniformly clear copies without fatigue to the typist.

After the order is written it is checked by the buyer with the requisition and since we have two buyers, one reads from the requisition while the other follows the transcription on the order. The order is then signed by the Purchasing Agent, at which time a rider concerning insurance requirements is attached if necessary. The order is also rubber stamped indicating one of several exemptions of State sales taxes when that condition applies. It is again observed by the clerk to further reduce the possibility of error after which the copies are ready for distribution.

The original is mailed to the vendor and this is the only copy carrying a signature. The second copy is for the Purchasing Department files. It is placed in a folder and stitched to the right side with all the prior records pertaining to the transaction filed behind it. All papers concerning the purchase subsequent to the writing of the order, except bills

of lading and invoices, are stitched to the left side of the folder in chronological order and this file then constitutes a complete record of the transaction. It is kept in an open alphabetical file until completed, whereupon it is transferred to the closed file also arranged alphabetically. If there is nothing in the folder but the one copy of the order, it is removed from its individual folder when it is transferred to the completed file and is filed there in a general folder under the name of the vendor. This saves considerable filing space as there are a large number of such orders and to keep each in a separate folder would use filing space needlessly.

The Stores Auditing Department files its copy of the order numerically, thus we have a cross reference. The lower part of the face of the Purchasing Department's copy is ruled to record receipts, the numbers over the columns being the item numbers as they appear in the body of the order. The reverse side is ruled for recording shipping data and also any communication which is referred to another department.

Copy No. 3 is supplied to the Stores Auditing Department and is used principally for the purpose of approving invoices for accuracy and to release them to the Auditing Department for payment when notified of the receipt of the material.

Copy No. 4 is a record of the transaction for the department originating the requisition.

A large number of our orders require delivery of the material to our warehouse and, therefore, we supply that point with copy No. 5, known as Receiving Dock Copy. Its main purpose is for determining the final destination of incoming shipments delivered at that point. The carbon is cut on this and succeeding copies so that prices are not shown.

Many purchases are of items according to a defined specification, necessitating an inspection and in many instances a test to determine whether the material complies. We, therefore, route this copy through our testing laboratory. This department flags the order carrying items which are to be inspected. When such items are received they are held by the Receiving clerk, who notifies the laboratory, and material receipts are not signed until the laboratory has certified that the material is correct.

Copies 6, 7 and 8 are the final material receipt and the carbon is cut so that quantities are omitted as well as prices. When delivery on the order is completed, copy 6 is forwarded by the department ordering the material to the Stores Auditing Department and copy 7 to the Purchasing Department. The arrival of these signed receipts in these departments is notice that in so far as delivery is concerned, files may be closed. If partial shipments are made, this form is not sent through until the final shipment has been received and all receipts of material which do not complete the order are reported on another form which we call a partial material receipt. Only the quantity of material which may complete the order is in such cases reported on the final material receipt.

The foregoing is a description of our general routine. There are exceptions, of course. There is the emergency purchase, the necessity for which can never be foreseen. Whether we like it or not, the confirmation purchase is something we can never entirely eliminate. Our routine in Kansas City for such purchases is the same as I have already described, except that the department confronted with the need for a quick purchase communicates this information to the Purchasing De-

Continued on page 54

Form 90239—7-36

PURCHASING DEPARTMENT
RECORD COPY

2

DELIVER TO

QUANTITY ORDERED	DESCRIPTION	ITEM No.	Our Lot No. Work Order No. ACCT. No.	PRICE

SHIPMENT DELIVERY } ON OR BEFORE

F. O. B.

TERMS OF PAYMENT

VIA

REQUISITION NO.

Matl. Recpt. No.	Dated	Received	Entered	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

SEE REVERSE SIDE FOR RECORD OF THESE ITEMS

(SEE REVERSE SIDE)

VENDOR'S ORDER No.

The second copy of the purchase order constitutes the departmental file

3: Retail Sales

HAROLD A. KNIGHT

MOST business barometers deal with large scale operations at a comparatively few points of activity. If indices pertain to prices they are usually manufacturers' or wholesale prices and where they deal with quantities they pertain to industrial or farm production, again of a wholesale nature. Indices available on business activity are, in the main, built upon the basis of production statistics and are, as a rule, considerably weighted by data supplied by the heavy or capital goods industries. Thus of the New York *Times* combined index of business activity, consisting of seven groups of activity, five pertain to production and two to carloadings, which represent distribution.

Thus all the more interesting, important and contrasting are the attempts made in the past few years to develop indices of retail sales, such as carried on by the Marketing Research and Service Division of the Department of Commerce. Considering that there are 1,500,000 retail establishments in the United States, the difficulty of securing complete and representative figures is obvious. Yet, of course, no well-rounded picture of business can be obtained without this yardstick with which to get the right perspective. Production is one thing and ultimate consumption quite another, as business men have had brought home to them forcibly during many periods of American business history.

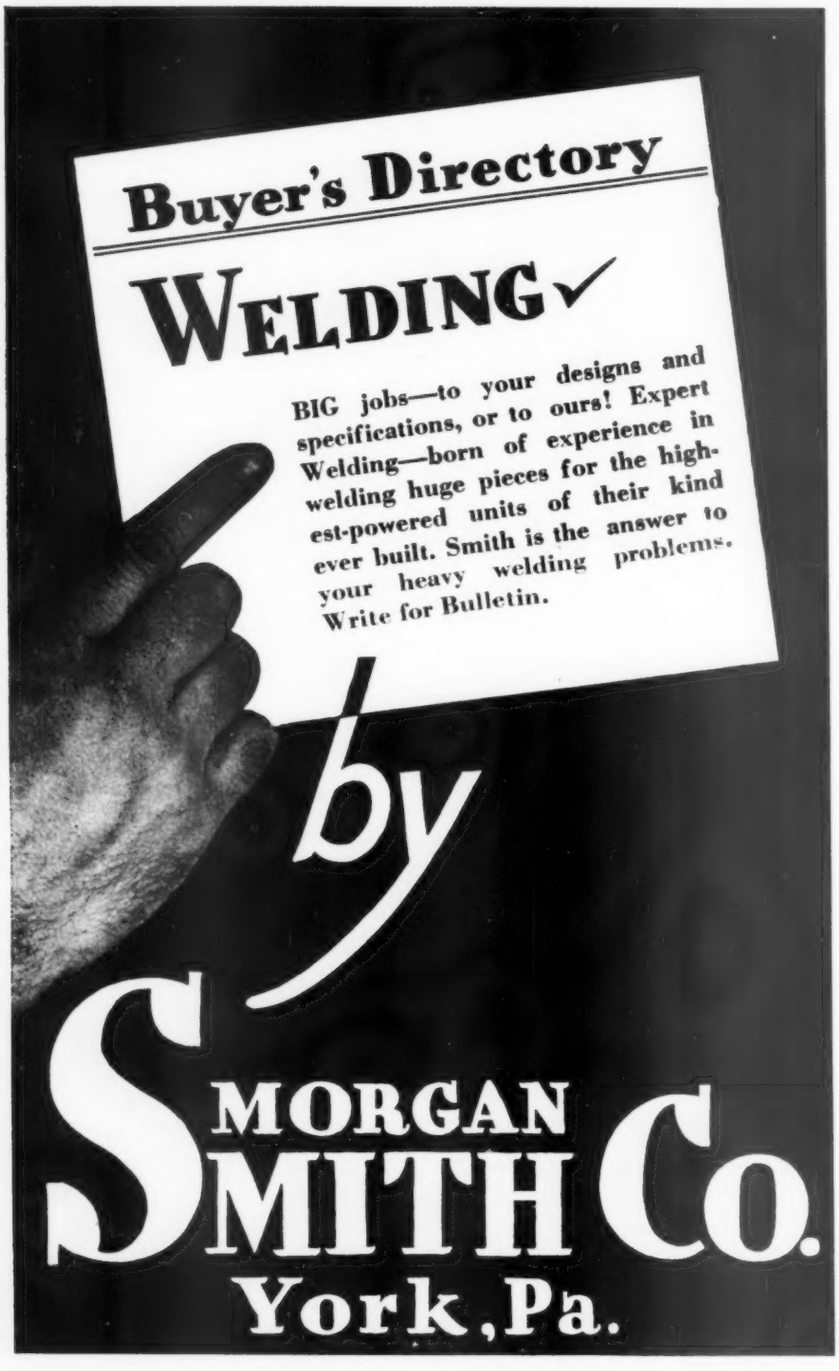
Statistics of such sales are being compiled through the assistance of state agencies which are already functioning, through the persuasion of other states and organizations to undertake the work and through direct solicitation of statistical returns where other agencies do not exist.

The first compilation of the kind was the Census of Distribution, 1929, followed by the Census of American Business, 1933, and then the Census of Business, 1935, all conducted by the Department of Commerce. Now the Marketing Research and Service Division of the Department of Commerce is essaying monthly compilations, a project which, by its own admission, is so far in a crude stage. Seven states already are compiling one group of such retail sales, that of independent stores as distinguished from chain stores, and it is expected that within a few months this number will have been increased to at least fifteen.

Practical use is already being put to these indices. Thus Los Angeles, always quick on the trigger to advertise herself, points out to other prospective advertisers that Los Angeles citizens spend more per capita in her department stores and other retail establishments than residents of other cities in the United States. Markets to be cultivated and concentrated on will become obvious as these statistics become more developed and issued ever more promptly.

The board of governors of the Federal Reserve System also makes monthly and quarterly studies of retail sales. The department store index computed by the Federal Reserve System has a coverage of approximately 52% of the total de-

Next Month:
Automobile Production


Buyer's Directory
WELDING
BIG jobs—to your designs and specifications, or to ours! Expert Welding—born of experience in welding huge pieces for the highest-powered units of their kind ever built. Smith is the answer to your heavy welding problems. Write for Bulletin.
by
MORGAN SMITH Co.
York, Pa.

partment store sales in the United States. This series plus those of the Department of Commerce for limited price variety store sales, chain grocery store sales, new automobile passenger car sales and rural sales of general merchandise, accounted for about 30% of the total sales made in the following major retail lines of trade: General merchandise, food, automotive and country general. These four groups represented about two thirds of the total volume of retail sales in 1933, as reported by the Census of American Business.

One of the main problems in securing the figures is the education of the retail establishments on the value of the statistics and securing of owners' cooperation. There is a very definite limit to the effort that a business man will put forth in order to supply figures voluntarily. In many cases it costs the owner money to compile the details; in other instances he is not willing to "reveal his business" to outsiders.

Again, the existence of 1,500,000 such establishments is a problem in itself; the orderly classification of them is another difficulty; still another is the high mortality of such concerns. Statistics, too, express only the dollar value of business, which means in times of high prices less goods turned over than during low-priced eras.

Another effort at compiling such an index is that of Dr. L. D. H. Weld, which was described in the September, 1936, issue of Dun & Bradstreet's monthly. Dr. Weld has developed a regional index by weighting each of four factors, automobile registrations, bank deposits, department store sales and life insurance sales.

Then there is the volume, Consumer Market Data Handbook, which, though it is not an index and does not show movements from one period to another, does present a considerable number of figures which are valuable to those interested in statistical data beneficial in the retailer's conduct of business.

It is probably true that retail sales is a field as opposite from the purchasing agents' field as are the two poles. Yet the truly broad cosmopolitan is the Eskimo in the Arctic circles who is familiar with the whaling situation in the Antarctic seas.

New Officers

The Public Utility Group of the National Association of Purchasing Agents elected the following officers for 1937–1938 at the midwinter conference held in Chicago, February 4 and 5:

Chairman, A. C. Bull, of Public Utility Engineering & Service Corp., Chicago.

Vice Chairman, A. C. Hansen, of Brooklyn Union Gas Co., Brooklyn.

Secretary-Treasurer, Sumner R. Keyes, of Edison Electric Illuminating Co., Boston

Recent Developments in High-Pressure Pipe and Joints

Abstract of an address before the Public Utility Group, N.A.P.A., at the midwinter conference, Feb. 5th

H. LEROY WHITNEY
Chief Engineer
The M. W. Kellogg Co.

THE PRIMARY REQUISITE of good pipe is good steel, and such surface defects as seams and scabs can be almost entirely eliminated by the thorough deseaming of both ingots and billets, and the not too rapid heating of the latter.

Seamless and large O.D. "Master-welded" pipe are available in many different alloys, but as you are primarily interested in the so-called low ferritic alloys, we will discuss only those alloys which are the most economical and practical for use as pipe in the modern high pressure, high temperature steam-electric generating station.

Molybdenum is by far the most useful alloying element discovered for use in steel in recent years. In addition to improving the fatigue life and heat treating qualities of high carbon steels, such as bolting steels, 1/4 of 1% of this element will, at 1,000 deg. F., add approximately 50% to the strength of a given plain carbon steel, and 1/2 of 1% practically doubles the strength. At lower temperatures the percentage increase in strength becomes less, but it is far better to manufacture a tough, ductile steel of 70,000 lbs. tensile strength such as heavy boiler plate and tubing by the addition of 1/4 to 1/2 of 1% molybdenum than by increasing the carbon and manganese contents.

A.S.T.M. specification A-158-36 for alloy steel pipe provides for seven grades of Ferritic (Magnetic) steels, and three grades of Austenitic (Non-Magnetic) steels:

Grade P-1, carbon molybdenum, is the most economical and usually the most practical grade, and this is the grade being used in practically all of the high temperature steam piping recently installed or about to be installed in connection with the many new superimposed units.

Grade P-3, chromium molybdenum, containing 1.50 to 2.00 percent chromium, and .60 to .80 percent molybdenum, was successfully fabricated by The M. W. Kellogg Co. for several U. S. N. destroyers. Grade P-3 has approximately 20% greater creep strength than Grade P-1 at 900 to 1,000 deg. F., and on account of the chromium content it must be normalized and drawn after bending and flanging, and stress relieved at approximately 1,350 deg. F. after welding.

Grade P-11 has the same characteristics as Grade P-3 and has apparently slightly greater creep strength at the higher temperatures.

Grade P-8, 18% chrome, 8% nickel, was installed by the Detroit Edison Co. in 1930 on one of the first high temperature units, because at that time more was known about the high tensile strength of this material than any other. This material unstabilized is subject to carbide precipitation and embrittlement at temperatures between 800 to 1,200 deg. F., and should be annealed and water quenched after bending or flanging. Furthermore, the cost of this material is not justified for steam pipe.

Grade P-1, carbon molybdenum, can be readily bent, flanged and welded by those experienced in the handling of this low alloy, but as molybdenum is an air hardening element, the seamless pipe may be too hard after hot working, and in many instances must be stress relieved in a proper furnace at 1,200 to 1,300 deg. F. in order to obtain the right ductility.

Carbon molybdenum steel, like most steels, has better creep properties in a normalized and drawn condition, and if drawn at 200 to 300 deg. over the operating temperature, tubing should meet all flattening tests and have a Brinnel hardness of not to exceed 140. However, after hot bending or flanging or welding, this normalized and drawn tubing may be very much harder and consequently less ductile than it should be. From the above it is indicated that the Brinnel hardness on all carbon molybdenum pipe should be determined after fabrication and that all pieces having a Brinnel hardness above 170 should be stress relieved.

Pipe manufacturers state that the physical properties of a given steel at room temperature are from 5 to 10% lower when made into seamless pipe than when rolled into plate, which is about the same difference one expects between forged and rolled steel products, but as by far the greater number of creep test coupons on which the above table is based were taken from seamless tubes, and as operating data on oil cracking furnace tubes indicate that higher stresses are safe, I feel that the tentative boiler code table is most conservative.

The other grades of steel covered by A.S.T.M. Specifications A-158

will hardly ever be used as power station piping, but Grade P-5, 4-6 chrome molybdenum, will probably be as extensively used for superheater tubes as it is now used for oil cracking furnace tubes.

Before leaving the subject of pipe, it might be well to mention that in addition to the successful Detroit Edison installation of a 10,000 K.W. unit with separately fired superheater operating at 1,000 deg. F. and using 18-8 chrome nickel seamless pipe, central station and industrial plants operating at more moderate temperatures and pressures have been in successful operation for some years, using plain carbon seamless pipe. However, when we are considering temperatures of 925 to 1,000 deg. F., and pressures of from 1,200 to 1,400 lbs. per sq. in., carbon molybdenum or low chrome carbon molybdenum not only make the necessary piping systems economically practicable, but foot for foot, the seamless pipe is less expensive and better than if forged and bored carbon steel tubing were resorted to. I say better for the reason that the lighter the wall of any pressure part operating at high temperatures can be made, the lower are the internal stresses when heating up and cooling down, and in piping, the lighter the wall, the more flexibility.

Corrugated bends are made so that they are from $3^1/_2$ to 5 times as flexible as plain bends of the same dimensions, and it is this fact which has made economically possible many changes and installations which would otherwise have been quite impractical.

When the temperature of the exhaust steam from a superimposed unit is higher than the temperature of the steam in the old system, the expansion is consequently greater, and the replacement of plain expansion loops or bends, or straight pieces in boiler or turbine leads in the old system has made it possible to take advantage of the higher temperature without changing the location of headers or equipment.

All corrugated pipe and bends are given a thorough heat treatment after fabrication. Tests at the U. S. Naval Experimental Station at Annapolis have proved that a fatigue life of fifty years or more is assured. There have been fatigue failures in plain pipe bends, particularly in pulsating water lines, and as the normalization of steel increases both its fatigue life and high temperature creep strength, is not the normalization of bends in important piping system a wise precaution?

We all thought we knew something about welding before the advent of the X-ray but I doubt if any experienced manufacturer or purchaser would waive this certain means of examination of welds in important pressure vessels or piping systems any more than a competent surgeon or unfortunate patient would waive this form of checking the accuracy of the work done, and the subsequent growth of bone or tissue.

The same argument applies to the heat treatment of welds. We know that there are inevitable locked up stresses in every weld made between rigid parts, that thermal stress relief removes practically all these stresses, and that where alloys containing chromium are used, that full annealing or normalizing of both removes these stresses, and returns the structure to its proper grain formation and ductility. Why then not insist on the proper furnace heat treatment of welded headers and the stress relieving of line welds? Piping systems are the arteries and veins of steam-electric generating stations; their failure means costly shutdowns and repairs.

Present A.S.A. Standard flange diameters and bolt circles were made sufficiently large to accommodate the heavy walls of cast flanged fittings and valves, and as a result it is quite easy to cup any A.S.A. flange either by pulling high tensile bolts up a little too much, or by the compound stresses encountered when lines are heating up or cooling down. Present flange standards are all right for medium pressures and temperatures, but for high temperatures and high pressures where bolted connections are not made to thick walled castings, the flanges should be specially designed and the diameters of flanges, bolt circles and bolts reduced. The results would be not only a very much stronger joint, but also a more economical joint.

For low pressure work, Van Stone joints of A.S.M.E. Code slip-on welded flanges are equally satisfactory, and asbestos gaskets with ordinary carbon steel bolts render satisfactory service. For medium pressures, Van Stone joints or hub welded flanges may be used, the latter being preferable. Asbestos, or metallic asbestos filled, or soft iron, or copper plated soft iron gaskets such as the Kel-raph, give satisfactory results providing the Brinnel hardness of the solid metallic gasket does not exceed 80. For high pressures and temperatures, Sarlum and Sargol seal welded joints have given satisfactory results, but a hub welded flange used in connection with a soft elliptical iron gasket fitting into wedge shaped grooves in the flanges gives most satisfactory results and is considerably more economical. Hub welded flanges are an integral part of the tube and lend themselves to use with small bolt circles.

The superiority and economy of properly made line welds as compared with flanged joints is acknowledged, and in most localities field welding of large diameter, low pressure lines is slightly cheaper than a flanged job; for medium pressure work, particularly transmission lines it is quite a lot cheaper, and for high pressure, high temperature work, very much cheaper. In some localities, however, on account of labor conditions, the flanged job is cheaper than a field welded job, and as he cost of a properly made field weld is, under good labor conditions, approximately double the cost of a properly made shop weld, it is decidedly to the interest of the Utility Companies to have all possible welds shop welds.

FOR SALE

Sheldon Colorimeter in good condition. Priced reasonable for quick sale. Address Box 301, c/o PURCHASING, 11 West 42nd St., New York, N. Y.

F. O. B.

(Filosofy of Buying)

WALTER R. WOLF, Purchasing Agent for the Lehon Company, Chicago, has "gone Kipling" and sends F.O.B. the following verses in the familiar rhythm of "Boots." Reader Wolf's company manufactures Mule-Hide roofing materials; his letterhead is adorned with the figure of an ornery lop-eared Jack. All of which is highly appropriate, for we predict that his fellow buyers will get a real kick from the parody:

Sales-men—Sales-men! Four and twenty odd today!
Twenty-seven more or less interviewed the day before—
(Sales-men—Sales-men bargin' in and out again
And I can't run out on 'em!)

Try—try—try—try—to think of something else again—
"Bzz—bzz—bzz—bzz" Salesman calling on the 'phone.
('Phones—'phones—'phones—'phones clickin' on and off again
And I dare not disconnect!)

P.A's—poor—guys, goin' nuts a-listenin'—
Good—Lord—keep—me from sayin' what I think to 'em!
(Sales-men—Sales-men—bargin' in and out again—
There's no runnin' out on 'em!)

'Tain't—so—bad—by day because I'm talkin' back to 'em,
But—night—brings—phantom strings of forty million odd
Men—men—men—men bargin' in and out again—
And I can't talk back to *them!*

I—can—stick—out all the daylight hours with them
But—night—brings—ghoulish rings from forty million odd
'Phones—'phones—'phones—'phones clickin' on and off again—
There's no talkin' back to *them!*

I've—been—a P.A. for twenty years and certify
This—job—ain't—pleasure, profit, loss or anything
But 'phones—'phones—'phones—'phones clickin' on and off again—
And men—men—men—men bargin' in and out again—
There's no discharge in this war!

• •

"A young fellow can make a powerful lot of mistakes in this business of purchasing," says the Old Line Buyer, "but he isn't a failure until he starts blaming them on some one else."

• •

YES, THERE ARE ghosts even among purchasing departments. We are indebted to the Baltimore *Sun* (February 18) for this item of psychic research:

"The ghost of a department abolished by the Legislature two years ago was found by members of the House Ways & Means Committee today hiding quietly between the pages of the State Roads Commission's proposed budget for 1938–1939. In the interest of economy and efficiency, the Legislature in 1935 abolished the separate purchasing department maintained by the Roads Commission and transferred its functions to the Central Purchasing Bureau. With the transfer of the functions went two employees to the Central Pay Roll Bureau. Looking things over . . . . the committee discovered provisions in the proposed State Roads budget for a superintendent of purchasing at $3,000 a year and a senior stenographer and assistant supervisor of purchasing at a total of $1,200 a year each. While the rest of the salary items in the list of the commission give the names of the recipients, beside these three items is the word 'vacant.' "

The Ways & Means Committee proposes to talk this over with the Roads Commission. Granting that the prerogative of independent departmental purchasing dies hard, here's one ghost that is doomed to be very thoroughly and permanently laid low.

• •

LATEST ADDITION to our file on Reciprocity is a copy of a resolution passed by the Executive Committee of the American Supply & Machinery Mfrs. Assn. and the National Supply & Machinery Distributors' Association, at their December meeting. It seems that reciprocal buying, which is conceived as helping two ways, can also hurt two ways. This is a step ahead in that it limits the proper field of such mutual transactions. Perhaps some day we'll have a resolution that goes all the way in defining the real economic place of reciprocity in business. Meanwhile, here's the story (the italics are ours):

WHEREAS, Distributors are economically justified because of the necessary function and efficient service they render in the territories in which they are located, and,

WHEREAS, Reciprocity buying, particularly where such business is solicited for delivery outside the normal trading areas in which the distributor is capable of serving efficiently and economically—

AND WHEREAS, Reciprocal buying and selling destroys the orderly functions of production, operation, purchasing and distribution,—destroying the initiative of the engineer, maintenance man and the purchasing agent whose ambition it is to select those articles of equipment and supplies that will prove satisfactory and economical in service—

THEREFORE, BE IT RESOLVED, That we, the Executive Committee of the American Supply and Machinery Manufacturers' Association and the Executive Committee of the National Supply and Machinery Distributors' Association, hereby go on record as disapproving the practice of soliciting and placing reciprocity business for delivery *outside of a normal trading and servicing area.*

• •

PURCHASING AGENTS are a long-suffering lot; vindictiveness is not in their nature. Witness the convention slogan proposed by local chairman H. P. Hellinghausen of the Tulsa Association: "Let's forget about Pittsburgh Plus, and make our slogan for this occasion, Pittsburgh or Bust."

THE MARKET PLACE

A quick review of the market noting major developments in supply, demand and prices of selected basic commodities

Supply	Demand	Market
BURLAP		
STRIKES IN CALCUTTA resulted in slightly curtailed production early in February. Generally, however, the industry is operating on an even keel. The dropping of production restrictions has been offset by greater world consumption and by lower unit costs for manufacturers. Calcutta stocks were up 15½ million yards in January to 110¾ million. U. S. stocks were reduced by a million yards, but at 354 million are higher than at any time in the first eleven months of 1936.	CONSUMPTION IS HEAVY. January cut-up in the U. S. was 75 million yards, up six million from December and close to the October record. Mills are covered on normal needs through the first half of the year, having given the producers a backlog sufficient to carry on operations well into June, and accounting for all available cargo space two months in advance. Current trading is only fair.	SPOT PRICES WERE firmly held through the first half of the month, but tapered off in the closing weeks. 10½ oz.-40 inch declined from 5.40 to 5.35, and others in proportion. The trading represented by these quotations, however, was light and consisted only of minor transactions.
COAL		
PRODUCTION ROSE, particularly in the southern smokeless fields, and is currently running about two million tons weekly ahead of 1936. Bituminous output at the end of the month was at 10,550,000 tons per week. Ohio valley shipments were promptly resumed after the flood; car supply is somewhat close.	INDUSTRIAL DEMAND is mounting, led by railroads, utilities, steel and coke. Buying is somewhat aggressive, against the possibility of an April 1 shutdown, with producers inclined to discourage accumulation of consumers' stocks in excess of a 30-day supply.	THE PRICE SCHEDULE is nominally unchanged. Higher prices, however, are being obtained on slack, screenings, and run-of-mine as the normal demand for prepared sizes fails to provide sufficient quantities of these classifications.
COPPER		
MANY PRODUCERS are now operating at capacity, and some idle mines are being brought in at the 15-cent level. U. S. mine production for January was 62,250 tons, up 1,850 tons from December. World refined stocks were down 17½ thousand tons to 336,050. Blister stocks, however, were up, reflecting the higher production.	FOURTH QUARTER consumption was up 12% to 92,400 tons. February sales totaled 74,988 tons, slackening somewhat in the closing week. It is noteworthy that futures trading on the exchange has been more active than for many months past. Foreign demand is exceptionally heavy, presumably representing accumulations for armament purposes.	THE RAPIDLY RISING price schedule registered two more advances in February. At mid-month, quotations went up a cent to 14, and a week later to 15 cents. This advance was paced by strong foreign markets, which went on to 16.30, U. S. producers being reluctant to follow to that high level. Considerable pressure is being exerted to reduce the 4-cent import duty, which has the effect of placing the 50% of producer-owned manufacturing capacity in a highly favored current position.
COTTON		
MILL STOCKS OF cotton were up in January to 2,066,302 bales, about 3% more than a month ago, and 43% more than a year ago. Stocks at compresses and in public storage were at 6,779,351 bales, down 13% from a month ago. Release of government loan cotton helped to relieve the spot situation, but was in smaller volume than anticipated.	JANUARY USE OF domestic cotton amounted to 678,064 bales, the largest figure in ten years, and is expanding. Active spindles were reported at 24,364,802, or about 65,000 increase over December. The demand for print cloth fell off somewhat in the first half of the month, but recovered in later weeks to the brisk pace earlier prevailing. Yarn requirements are covered into the third quarter.	SPOT COTTON PRICES sagged for three weeks, recovering sharply in the closing week to show a slight net advance for the month, and in the first week of March went to 13.87, highest since August, 1934. Textile prices are off from January levels, ⅛ to ½ cent. Yarn prices unchanged. In general, the distant positions are firmer, with the old crop in a stronger position than the new.

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IN THE HOTEL PENNSYLVANIA

NEW YORK CITY

MARCH 23-26, 1937

Supply	Demand	Market

IRON and STEEL

STEEL OPERATIONS are being extended to the utmost, and are scarcely abreast of current new business. With the pace reported around 86%, a high for the recovery, tonnage volume is believed to be at an all time high, and to represent the practical capacity of the industry. Both blast furnace and steel making capacity were reduced in 1936, the latter being due to abandonment of 870,000 tons of Bessemer capacity (this type now representing only 7% of output as compared with 86% in 1875). Increase of 685,000 tons in open hearth capacity (now representing 91% of output as compared with 2% in 1875) failed to make up the deficit. January shipments of steel were 1,149,918 tons, the best in seven years. Deliveries are now about three weeks behind. Warehouse stocks are depleted. Pig iron is growing more scarce in all world markets. The threat of interruption due to labor conditions is apparently cleared up under the new agreements.

EARLY IN FEBRUARY the heavy buying was attributed to fears of a general strike. With this factor settled, an explanation was sought in the prospect of higher prices for the second quarter. Both of these factors were unquestionably present, but it has subsequently developed that current high rates of demand really reflect a firm and well supported movement for actual and immediate use, in which building steel is the only principal branch of the industry to show any decided lag. Railroad and heavy steels have been particularly active.

THE PRICE ANNOUNCEMENT of March 5th revealed a much more sweeping advance than had been anticipated. Instead of a selective and relatively moderate upward revision, the entire list advanced, ranging from a $3 rise on semi-finished steels to $8 on the finely finished items. Some indication of this possibility was given by the general wage increases of late February, which added about sixty million dollars to the payroll of the U. S. Steel Corporation alone—a strong justification of the higher schedule even without considering the recent increases in material costs. With the exception of Bethlehem, most important producers followed the revision promptly. Most revolutionary, however, was the fact that these prices were put into immediate effect, without the usual month's notice. As recently as last month, belated deliveries were being made at 4th quarter 1936 prices, but the "2nd quarter" schedule is a month ahead. Pig iron also advanced, and scrap steel is at the highest point in fourteen years.

LUMBER

LUMBER PRODUCTION and shipments were sharply up in February, and at the end of the month were at 56% and 74% respectively, of the 1929 weekly average. Production was running slightly under new orders. Western lumber now moving in large volume following settlement of the maritime strike.

DEMAND IS HEALTHY, the backlog of unfilled orders now standing at $2^1/_2$ times the figure of a year ago. Northern hardwoods and southern cypress were not moving as rapidly as other grades. Interest shown at the furniture shows gives evidence of excellent business in this important field.

PRICES ON HARDWOODS were firm and unchanged. Softwood prices continued to advance despite a better supply situation. Southern pine went from 25.09 to 26.48 about the first of February, and to 26.73 two weeks later, a gain of about 7% for the month.

NAVAL STORES

THE TAG END OF the current rosin crop is now coming in, with a preponderance of the lower grades. Stocks have been worked down about 12% in the past three months, and stocks held by the CCC have also been substantially reduced, both in rosin and turpentine, to the point where they are no longer considered as a threat to the market. No official report has been made as to progress on the 1937 crop restriction plan, but some labor shortage in the turpentine forests is reported.

THE ACTIVE BUYING interest which accompanied recent price advances has apparently run its course, and trade is relatively stable in a routine market. Foreign demand continues in good volume. Domestic users are now fairly well covered for some weeks in advance and are content to await further developments.

ROSIN PRICES WERE irregular in February. After a break in the opening week there was a good recovery. Grade B went from 10.00 to 11.20. In the second half of the month a downward trend set in, carrying the quotation to 9.50, a net loss for the month. The weakness was more pronounced in the lower grades. Turpentine was steady at about 47 cents, but it was reported that some CCC stocks were disposed of at substantially below this level.

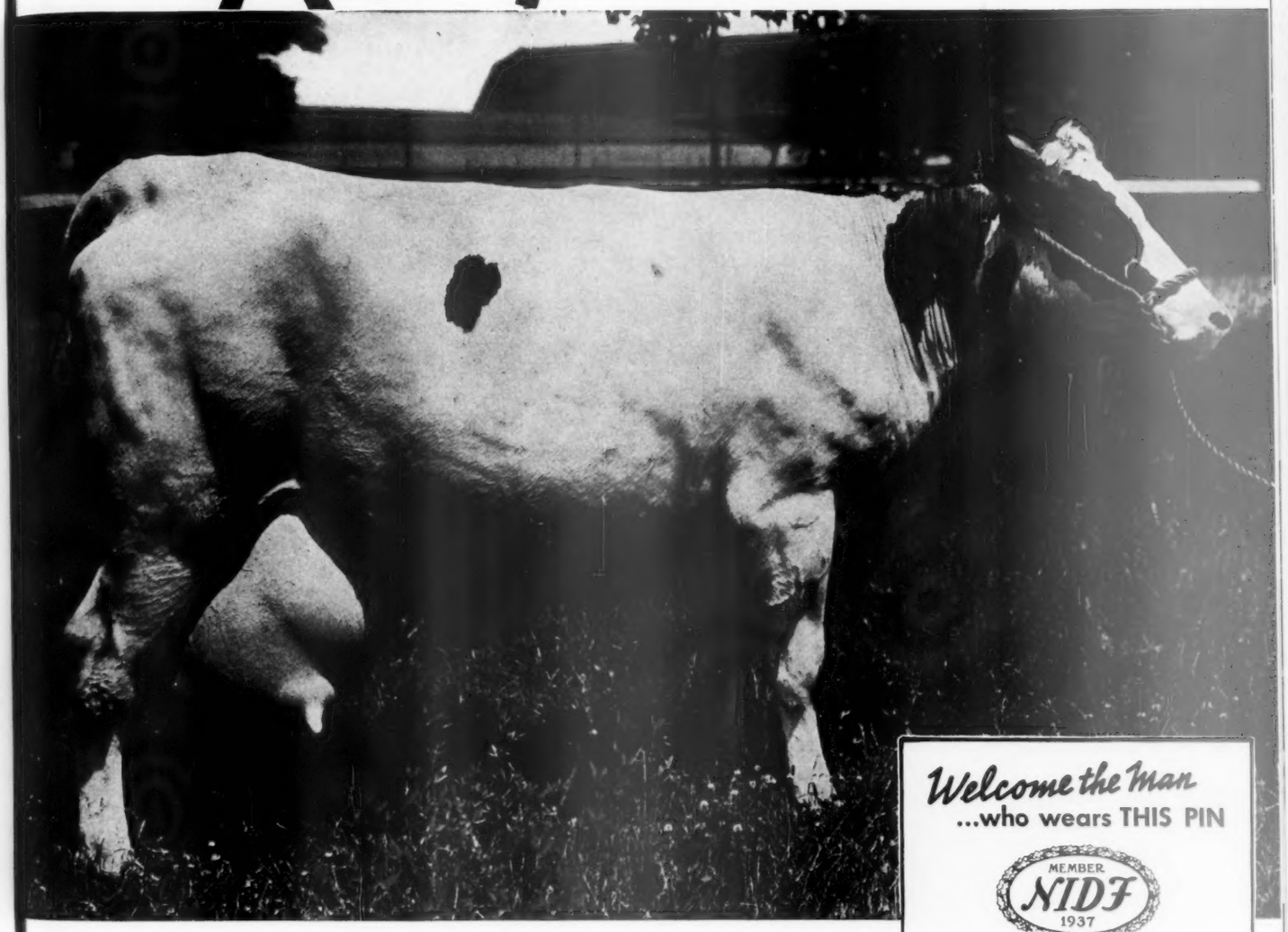
PAPER

ESTIMATED PRODUCTION of paper for 1936 was 16.4% ahead of 1935, and 7.7% ahead of the previous peak in 1927. The expansion is continuing, and deliveries are 10 to 14 days slow.

DEMAND IS ACTIVE, particularly in newsprint and coarse papers. The backlog of orders is greater than for eight years past, and is characterized not only by a widening of normal demand, but by many new industrial uses.

PRICES GENERALLY firmed in February as rags, mechanical and chemical pulp all advanced. Kraft prices are up, tissue stronger. Newsprint producers are confidently discussing an advance to 47.50 before the end of the second quarter.

YOU DON'T HAVE TO *Keep a Cow!*



TO HAVE a quart of fresh milk each day you don't have to keep a cow! You are able to get it without such trouble and expense because a local milk company provides a "cooperative service"...assumes the problems and costs of getting milk and delivering it to you and hundreds of other consumers like you.

In a similar way a recognized industrial distributor, identified with the National Industrial Distributors' Foundation, provides a "cooperative service" in your locality that enables you to avoid work and expense in getting the bulk of your industrial supplies and equipment. He maintains complete and specialized facilities which relieve you of time-consuming, costly tasks in stocking to meet plant requirements.

By sharing the valuable facilities of this "cooperative service" with other plants in your neighborhood, you can obtain *what you want, when you want it,* and at a cost that reflects the economies of sharing expenses. It will pay you well to call in the man who wears the N.I.D.F. emblem and plan ways to make full use of his money-saving facilities.

Welcome the Man
...who wears THIS PIN

MEMBER NIDF 1937

He represents one of the leading industrial distributors whose ability to render complete "cooperative service" has been verified. He offers these combined facilities for saving you work, worry, money:

1. Expert buying service that "narrows-down" your work of selecting supplies.

2. Superior warehousing facilities that enable you to limit plant stocks, and reduce stock-carrying charges.

3. To-your-door delivery that cuts down shipping and trucking expense.

4. One-source supply which enables you to obtain many items with a single order.

5. An information service that gives you latest unbiased product-and-price data without bother or delay.

NATIONAL INDUSTRIAL DISTRIBUTORS' FOUNDATION

☆ **of the Industrial Supply Research Bureau, 7th and Bainbridge Sts., Richmond, Va.; an activity of the National Supply & Machinery Distributors Assn.; Southern Supply & Machinery Distributors Assn.; and American Supply & Machinery Manufacturers Assn.** ☆

Supply	Demand	Market
PETROLEUM		
CRUDE OIL OUTPUT went to a new high at 3,220,000 barrels daily average in the first week of February, and soared to 3,286,175 barrels in the third week. A slight decline was reported in the final week, but the flow was still above the previous record. Stocks of crude, and of gas and fuel oils were down; gasoline storage rose satisfactorily, with production around 94%. Allowable production in Texas for March was again raised by 38,420 barrels daily over the February quota.	DEMAND WAS GENERALLY improving. Domestic heating oils moved in better volume, particularly in the east; gasoline consumption is up 8 to 10%; kerosene, bunker oil, and industrial products are active.	THE PETROLEUM PRICE schedule was firmer in February. Pennsylvania crude advanced 10 cents a barrel in the closing week, Mid-Continent unchanged. Tank car gasoline advanced $^1/_4$-cent at mid-month to a range of $6^3/_4$–7, with retail schedules more strongly held than for some time past.
RUBBER		
WORLD STOCKS OF rubber are now below 500,000 tons. The most drastic reduction has been in the United Kingdom, but little alarm is felt. U. S. stocks, down to 201,915 tons, are the lowest in six years. Dealers' stocks in the colonies are slightly higher and the movement from plantations to ports is relatively free. Malayan shipments of 41,571 tons in January were about 3,000 tons above the quota, and relief from spot scarcity is in sight, though crepes are still tight and command a substantial premium. Tire sales and production are up, with heavy stocks at the factories.	SMALL FACTORIES came back into the market in February, but the larger users continued to stay on the sidelines, leaving the market largely to speculators, who were quite active in both nearby and future positions. January consumption of 48,744 tons was a little better than early estimates. The lack of factory interest has been characterized as amounting to a buyers' strike, and many feel that a more sustained demand from this source is imminent.	RUBBER PRICES were generally trending upward, but at a moderate rate. Early advances in anticipation of the settlement of the General Motors strike were not held, but despite this setback a net increase of $^3/_4$ of a cent for the month carried spot quotations to 22 cents, with a premium of $2^3/_8$ cents on crepes.
TIN		
WORLD STOCKS OF tin were lower in February, but there was evidence of some accumulation in Great Britain for armament purposes, and U. S. warehouse stocks went above 1,000 tons. The producers' position is regarded as fairly strong.	U. S. BUYING OF tin was light in February, and chiefly confined to periods of price recessions. This of course does not include purchases made in primary markets, on which no accurate statistics are available.	TIN PRICES WERE slow in following the general advance noted in metals during February, but gathered momentum in the second half of the month, going to a high of $55^1/_2$ cents and closing at $54^3/_4$, a net advance of five cents for the month.
ZINC		
SUPPLIES OF ZINC became increasingly scarce in February. Ore stocks are reported as down to about one week's supply at current brisk rates of shipment, and slab stocks are at about three weeks' supply. Slab stocks at the end of January were 34,143 tons, down 10,600 tons during the month and down 54,522 tons in a six months period. Production is expanding, but running behind current shipments, which are chiefly for immediate use. Consumers' stocks are low and even the substantial backlog of unfilled orders does not represent more than sixty days' coverage.		THE STRENGTH WHICH zinc prices earlier demonstrated was well maintained in February as quotations went into new high ground. An advance of $^1/_4$-cent to 6.25 (East St. Louis) on February 5, represented the highest level since November, 1929. Subsequently this was carried to 6.40 (February 10) and 6.80 (February 24), and to 7.00 in the first week of March. Ore prices also advanced sharply. The figure of 43.50–44.50 per ton at the close of the month was an advance of 5.50 within four weeks.
	CONSUMPTION OF ZINC was briskly maintained, particularly in the steel, brass and die-casting industries. Demand was active, and deliveries for the most part urgent. January takings amounted to 50,638 tons, up 9% from December. Unfilled orders currently stand well above 80,000 tons, mostly for delivery in March and April.	

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Also, Frigidaire means a tremendous saving in actual dollars and cents over old-fashioned methods. A saving so great that Frigidaire really pays for itself in a short time, and continues to earn a big investment return for years to come.

Frigidaire equipment has the flexibility and capacity to meet every industrial requirement—completely, efficiently and economically. It will pay you to get full details and first-hand information. . . . For free survey and estimate, see your local Frigidaire Dealer, or write Frigidaire Division, General Motors Sales Corporation, Department 81-3, Dayton, Ohio.

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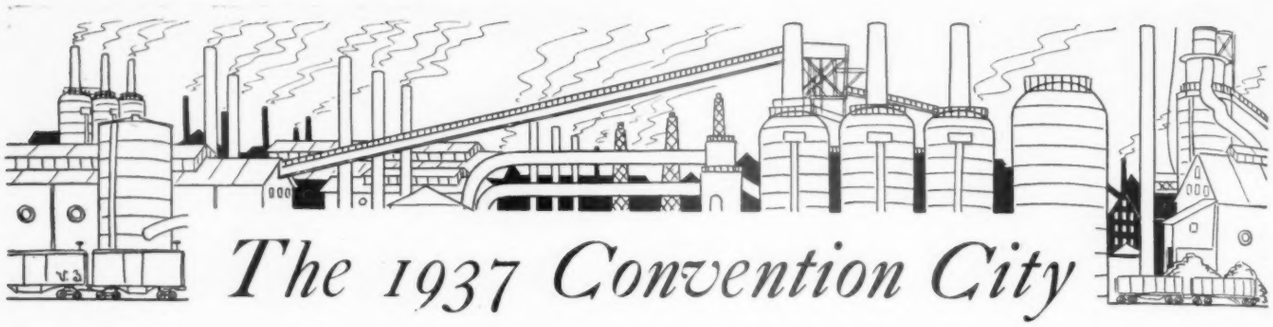


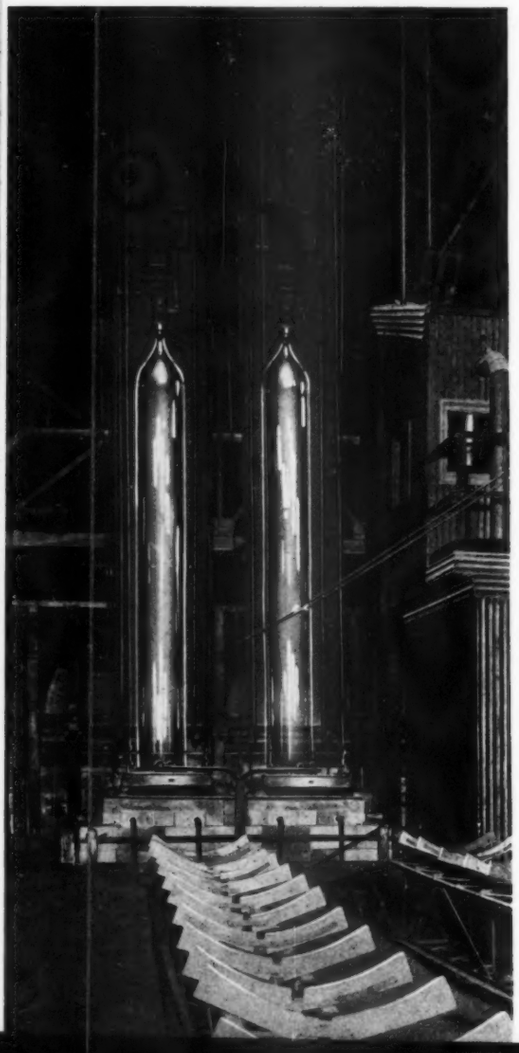
The 1937 Convention City

Pittsburgh's GLASS Industry

JOHN R. BECHTEL

General Purchasing Agent
Pittsburgh Plate Glass Co.

ALTHOUGH THE PITTSBURGH district is usually recognized as the center of the flat glass industry, there are comparatively few who know the history of this development—few who realize that the glass industry in this area was first established only twenty odd years after the signing of the Declaration of Independence—few who know why Pittsburgh was decided upon in preference to other seemingly suitable locations.



The story is not all cheerfulness, for there were years and years of dismal, disheartening failures. Difficulties of manufacturing, throttling competition from Europe, and early financial instability all added to the hardships, but the growth and present strength of the industry is ample proof of the success of the continued efforts to establish the flat glass center in the Pittsburgh area.

In 1797, the country around Pittsburgh was still a wilderness—wild and very thinly settled—but it was in that year that the foundation was laid for the glass industry in this territory. A group of glass workers, mostly Germans, left Frederickstown, Maryland, and crossed the mountains for the purpose of building a glass works where Louisville, Kentucky, now stands. While stopping at Wheeling, West Virginia, one John Gallatin met them by accident, and induced the group to locate at New Geneva, Pennsylvania, a small town ninety miles from Pittsburgh. Here they built a small glass house, and it was indeed small—only forty feet square, built no doubt, from logs or native stone. In any event, from this humble shack grew a business which now reaches into every corner of the earth, and has caused Pittsburgh to be known as the Glass City.

This region proved to be rich in the two factors which are of vital importance to the glass industry—sand, which is the chief ingredient of glass, and fuel, which might be either coal or gas, to furnish the terrific heat used in reducing the powdery ingredients to the molten state. As a result, it was only natural, as time went on, that other companies looking for a desirable place to locate should settle in and around Pittsburgh because of its natural wealth of materials which make the economical operation of glass factories possible.

Early glass making was confined to window glass produced by the tedious and (judged by today's standards) the unsatisfactory hand-blown method. Polished plate glass was a luxury imported from Europe, for all attempts to successfully produce this product in America had proved futile time after time. Thus it was that nearly one hundred years elapsed after Gallatin's venture before the first successful plate glass plant was established. This was at Creighton, Pa., just twenty miles east of Pittsburgh on the Allegheny River. Here was fuel in abundance, plus the advantage of cheaper transportation afforded by the Allegheny and Ohio Rivers.

It was in the early eighties that this company (called the New York

City Plate Glass Company), was organized, but after struggling for many months with numerous problems, including financing, the founders enlisted the services and capital of Mr. John Pitcairn. Later in the year, the corporate name was changed to the Pittsburgh Plate Glass Company, and construction was started on plants at Tarentum and Ford City, Pa. These, then, were the first factories to successfully and continually produce plate glass in a commercial way in the United States. Today, this same Company, the Pittsburgh Plate Glass Company, is the largest producer of flat glass in the world, with over seventy branch offices in other parts of the country.

The permanent success of flat glass manufacturing in this country has been insured by the refinement of processes which permit quantity production of increasingly higher quality. The old method of manually blowing window glass to a cylindrical shape, after which it was split down its length and then flattened, was supplanted by a mechanical process which made great cylinders some forty feet long. These were cut into sections and then each section was split and flattened. Obviously, it was impossible to completely flatten out these cylinders, so that a slight curve always remained in the glass which resulted in distortion of objects seen through it.

However, the Pennvernon process was developed which drew the molten glass straight up into the air in a flat, even sheet in a continuous process—the raw materials being fed into one end of the long tank of molten glass, and the glass, itself, being drawn directly upward from the opposite end. By the time this glass has reached the third floor, it has cooled sufficiently to be cut off and sent through the remaining steps of inspection, cutting and packing.

In the manufacture of plate glass, also, a continuous draw process was developed to take the place of the pot method. Thus, today, the ingredients are fed into the tank at

Continued on page 55

Construction TECHNIQUE

A big build-up to impress the public with the merits of your product, but . . . what then? To guarantee 100% consumer satisfaction, pack your product in HINDE & DAUCH corrugated shipping boxes . . . the best money can buy . . . quality materials . . . skilled workmanship . . . modern machinery. It's a real source of satisfaction to know that your shipping boxes embody all of the latest developments in modern shipping box engineering and construction.

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PERSONALITIES in the NEWS

WILLIAM H. GATES, JR., Purchasing Agent of the Baldwin-Duckworth Chain Corp., Worcester, Mass., addressed a dinner meeting of company foremen and executives recently on the work of his department.

EDWARD M. WELCH, Purchasing Agent of the American Manganese Steel Co., Oakland, and FRED P. HANSON, Purchasing Agent of Pacific Gas & Electric Co., San Francisco, addressed the thirteenth annual Iron & Steel Conference of the California State Chamber of Commerce at the Del Monte Hotel last month. Mr. Welch discussed "Silicosis Legislation" and Mr. Hanson spoke on the Robinson-Patman Act.

WILLIAM CALIHAN, formerly purchasing agent for the Mixing Equipment Co., Rochester, has joined the sales organization of the Patterson Foundry & Machine Co., in the Rochester territory.

HENRY THOMAS has been appointed Supervisor of Purchases for the Sun Oil Company, Philadelphia, succeeding the late Harry Booth. R. A. BOOTH has been acting as buyer for the company during the interim.

J. D. CRANEY, for the past twenty years purchasing agent for the Potlatch Lumber Co. in northern Idaho, has been named State Purchasing Agent for Idaho, effective last month. He succeeds CAPT. W. H. ABENDROTH, who served in that position since 1931.

LEONARD O. FRYER, Purchasing Agent of the Graybar Electric Co. at San Francisco, has been named sales manager. JOHN SCALAPINO succeeds Mr. Fryer in the purchasing office.

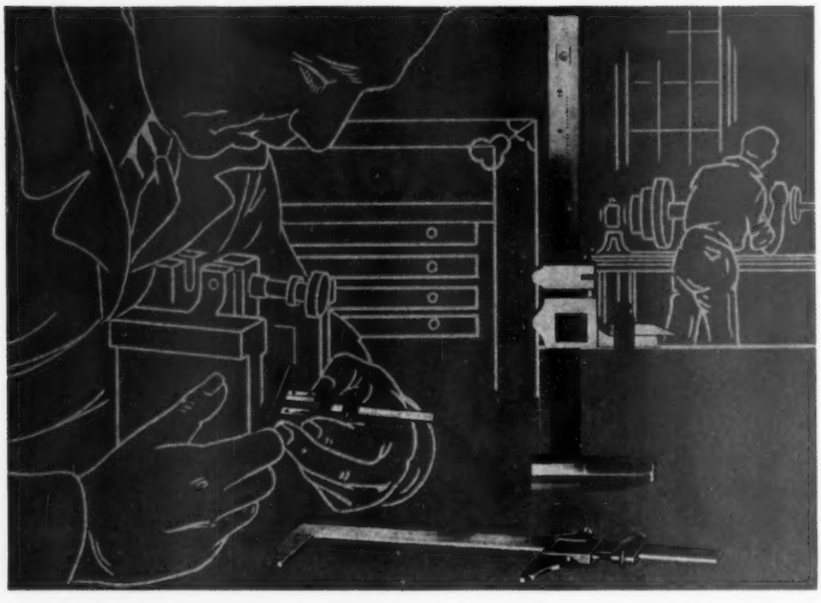
JOHN B. MILLER of Clarksville has been named State Purchasing Agent for Tennessee. Mr. Miller was for some years manager of the hardware firm of Perkins & Miller, and has been active in agricultural betterment in Montgomery County.

HARRY A. WILSON has resigned as purchasing agent for the Superior Oil Corp., Tulsa, to accept a similar position with Bethlehem Supply Corp. of the same city. Mr. Wilson is a past president and national director of the Tulsa Association. GEORGE FRITZ, formerly of British-American Oil Co., has been named purchasing agent for Superior.

EARL G. MOELLER has resigned as State purchasing agent for the Iowa Emergency Relief Administration to join the sales staff of W. D. Hanna & Co. of Des Moines.

R. B. HYNES has been appointed purchasing agent of the Universal Atlas Cement Co., Chicago, a subsidiary of U. S. Steel Corp., effective March 1.

W. L. COX, Knox County (Tenn.) purchasing agent, has been named by Gov. Browning as one of the



PRODUCTION BEGINS in the TOOLROOM

YOUR best assurance of fast accurate work on jigs, fixtures or special gages is a plentiful supply of Starrett Precision Shop Equipment Tools. The revised edition of Starrett Catalog No. 25 P illustrates and describes over 3000 fine precision tools and dial indicators, each one designed to bring new speed and accuracy to measuring or inspecting operations. Write for your free copy.

THE L. S. STARRETT CO., ATHOL, MASS., U. S. A.

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three members of the new Board of Commissioners which took over the administrative direction of county affairs March 1.

E. A. JOERING, Purchasing Agent and formerly assistant treasurer of the William S. Merrell Co., Cincinnati, was elected to the position of secretary and re-elected to the board of directors at the recent annual meeting of the board.

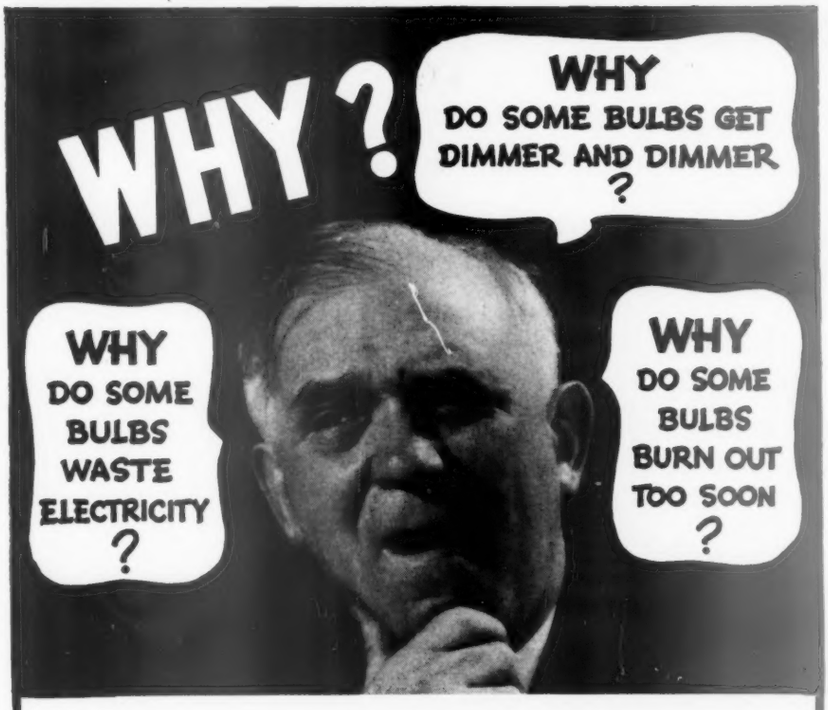
HARRY C. CLOW has been named purchasing agent for the Eagle Lock Co., Terryville, Conn., succeeding the late Charles W. Plumb. Mr. Clow has for many years been production manager for the company.

WILLIAM E. GIBSON, for the past two years affiliated with the Internal Revenue Department, has been named as one of the purchasing agents for the State of Michigan. He succeeds Frank Burt of Grand Rapids.

STUART S. SLINEY has been named purchasing agent of a new operating and marketing division of the Shell Union Oil Corp., established last month with offices in the American Industrial Building, Hartford, Conn.

ROBERT D. DANN, since 1928 purchasing agent for Hurley Hospital, Flint, Mich., has resigned to take a position with the G. A. Ingram Co., Detroit. Superintendent Hueston will temporarily assume the purchasing duties.

"A Buyer's Guide to Diamond Mechanical Rubber Goods" is the title of a new 27-page illustrated catalog issued by the Diamond Mechanical Division of the B. F. Goodrich Co., Akron, Ohio. It contains illustrations and descriptions of more than fifty mechanical rubber products and accessories widely used in all industry, such as transmission and conveyor belting, hose and fittings, tubing, packing, cements, valves, and matting. Also included are tables listing hp. capacity and minimum pulley diameter for belts of various sizes and plies, general data pertaining to the selection and installation of conveyor belting for different types of service, and interesting facts about hose construction and application.



Why does it pay to buy lamps that *Stay Brighter Longer?*
Here are some Money-Saving facts:

QUESTION: What do we mean when we say that some bulbs waste as much as 30 per cent of the electricity they use?

ANSWER: Scientific measurements by Electrical Testing Laboratories, show that many inferior bulbs *give 30% less light* than G-E bulbs for the same consumption of electricity.

QUESTION: What does this loss mean in money?

ANSWER: Well, think of wasting 30% of every light bill! It means that a poor bulb would be expensive even if you got it free—wrapped up in a dollar bill! If a bulb gave only 5% less light than an Edison MAZDA lamp, it would be a bad investment even though you got the bulb at a "bargain" price.

QUESTION: After all, isn't a light bulb a pretty simple thing to make?

ANSWER: Decidedly not! The making of a good bulb calls for the highest degree of manufacturing precision and skill. Every bit of material that goes into a G-E bulb is scientifically selected and tested.

QUESTION: Why do some bulbs get dim so quickly?

ANSWER: Purest materials, up-to-date machinery and careful inspection, all work together to make G-E bulbs the kind that *Stay Brighter Longer.* Lack of any of these factors results in imperfections in lamp construction—invisible flaws in the tiny hair-like filament, impure gas or gas at improper pressure in the bulb—which cause poor lamps to grow dimmer and dimmer with use.

QUESTION: Why do some bulbs burn out too soon?

ANSWER: Slight imperfections in the filament of a bulb—too small for the human eye to see—may be sufficient to cause a poorly made bulb to burn out after only a few hours of service.

QUESTION: Are the G-E bulbs of 1937 better than they were ten years ago?

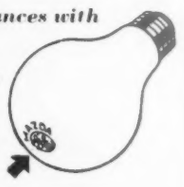
ANSWER: Yes! There have been marked improvements in G-E lamp quality since 1927. The G-E bulbs you buy today are stronger, sturdier, more uniform and more efficient. They give you more light for your money than ever before.

QUESTION: Since G-E bulbs have improved, year after year, haven't prices gone up in proportion?

ANSWER: Prices have come *down!* Again and again G-E has given the public the advantages of manufacturing economies. Since 1921 General Electric has made 18 major price reductions on MAZDA lamps.

Don't take chances! Look for the G-E trade-mark on every bulb you buy.

Why take chances with substitutes when Edison MAZDA lamps cost so little?



EDISON MAZDA LAMPS

GENERAL ELECTRIC

The Cost of Purchasing

IN RESPONSE TO numerous requests for further information regarding the cost of purchasing referred to in the February issue (page 9), we present the following explanation of the method used in that particular instance.

Some time ago, the executives of a fair sized eastern purchasing department decided to get a complete picture of their own costs, analyzed and allocated to the various operations performed by every one from the purchasing agent down to the humblest clerical worker.

Accordingly, a month was set aside during which every one connected with the department kept a detailed account of the time spent from day to day on various tasks—ten minutes at this, ninety minutes at that, and so on. At the end of the month, each employee's record was tabulated on a sheet which showed not only the daily allocation of time, but the totals for the month in minutes, in dollar cost, and in percentages of time and cost.

Fourteen of these time sheets make up the basic data for the cost study, and they furnish an interesting record. With the exception of one man whose entire time was devoted to inspecting materials and investigating new sources of supply, the sheets contain from 16 work classifications upward, the typical record showing about 24 different classifications.

This apparently excessive diversification of effort requires some explanation, for the picture is not really so complicated. A great many of the items which are separately listed are actually closely related as to types of work and responsibility. Thus the purchasing agent's conferences with his buyers are separately noted and there are four items which might be reasonably grouped under the head of "Departmental conference". Similarly the file clerk's record is subdivided into the filing of quotations, requisitions, plant correspondence, firm correspondence, invoices, incoming inquiries, complete orders, cancellations, authorizations, catalogs, shipping notices, withdrawals, reports, and miscellaneous. There is much enlightening information to be derived from such an analysis in an occasional spot check of this sort, though for practical purposes the single heading of "conference" or "filing" might be sufficient. It indicates, for example, which of the buyers are able to operate independently, with a minimum of supervision, and which ones lean most heavily on the counsel and decisions of the department head. It indicates that the cost of maintaining a separate file is more than the price of an extra cabinet and a set of tab folders, and is a deterrent against the possibility of carrying on records of slight or doubtful value.

Further it is to be noted that some of the items are of a special nature, occurring only once or twice during the month, as in the case of checking a certain list, typing new index labels for the files, attending a bi-weekly 15-minute educational period, or a monthly meeting of all department heads. Considering only those items which are distinctly of a recurring nature, on which some time is spent during twelve or more of the twenty-four working days of the month, the average is brought down to about eight, instead of twenty-four, different classifications, still subject to grouping of related items as noted in the preceding paragraph. And more significant than this, in every case but one, three such items represent more than a substantial majority of the total time of the worker. Thus one employee reporting time spent on 18 different operations, spent 74.63% of that time on one job and 9.77% on another.

On the basis of these time and cost sheets, a distribution of direct labor expense can be made under the headings: (1) Executive, (2) Correspondence, (3) Filing, (4) Inspecting, (5) Inquiries, (6) Invoices, (7) Orders, (8) Purchasing, (9) Receiving Reports, (10) Reports, General, (11) Requisitions.

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It is necessary to pro-rate some of the time among several of these headings, but for the most part the information is such that it can be directly allocated.

General and administrative expenses, both direct and indirect, are similarly handled. This includes executive salaries, traveling expenses, stationery and printing, postage, telephone, telegraph and cable, office supplies and expense, interest, automobile repair, depreciation and operation, rent and electricity, equipment and depreciation, insurance, and other expenses.

With this information, and a knowledge of the volume of work handled during the month, it is possible to calculate a complete cost on the major operations of the department.

There were 2,176 purchase orders issued during the month. The direct labor costs allocated to this function, including 17 operations exclusively devoted to this end and 7 others which were pro-rated to this and other departmental functions, amounted to $234.61. To this was added $125.41 of direct expense, and $61.19 of general overhead. Additional direct labor for filing, checking, and keeping up the order books, amounted to $15.50. The cost per order is therefore seen to be fractionally over 20 cents. Since the 2,176 purchase orders covered 3,378 different items, the cost per item was 12.92 cents.

Including the cost of pricing, approving, and handling the requisitions for which these orders were placed (calculated in a manner similar to the above) the cost per order was 32.87 cents, and the cost per item 21.17 cents.

The cost of issuing 146 inquiries, which were made six to the set, amounted to 10.3 cents per inquiry.

The cost of handling 2,724 invoices amounted to 13.295 per invoice.

There is no attempt made in this analysis to figure the cost of purchasing as a percentage of the dollar value of purchases, or to measure departmental efficiency by any such standard or formula. It is simply a cost-finding operation, and the number of transactions is properly taken as the basis for measuring performance.

Aside from the cost information developed from this study, there was some very interesting light thrown upon the use of time in the various departmental duties, and in a number of cases this has pointed the way to a refinement of procedures which were shown to be excessively time-consuming.

To cite a single instance, one clerk had been given the responsibility of returning invoices which were found to be irregular for any one of a number of reasons—wrong number of copies, errors in terms or extensions, lack of an order number, etc. While this was of course a routine sort of correspondence, it nevertheless entailed a considerable amount of individual typing and phrasing of letters to suit the case in hand. The true extent of this simple task was not appreciated until it showed up in the time analysis, and steps were immediately taken to replace the letter system by a small printed form requiring only a check mark.

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AMONG THE ASSOCIATIONS

FEBRUARY 2

Oakland—Luncheon meeting of the **East Bay Group, Northern California Association,** at the Lake Merritt Hotel. Speaker: C. O. Tulka of Green Chemical Products Co., "Vagabond Trip across the Arabian Desert."

Milwaukee—Meeting of the **Milwaukee Association,** at the Plankinton Hotel. Speakers: C. A. Kelley of Riverside, Cal., President of the N.A.P.A.; George D. Spohn, Attorney, "The Robinson-Patman Act."

FEBRUARY 4

San Francisco—Luncheon meeting of the **Northern California Association,** at the Palace Hotel. Speaker: Wayne Listerman, acting agent of the U. S. Department of Justice, "The Set-up and Operations of the Department of Justice."

FEBRUARY 4–5

Chicago—Midwinter conference of the **Public Utility Group, N.A.P.A.,** at the Palmer House. Fifty-six members of the group attended the sessions. The principal papers are presented elsewhere in this issue.

FEBRUARY 8

Boston—Meeting of the **New England Association,** at Schrafft's. Speaker: George A. Renard, Secretary of the N.A.P.A., "From One P.A. to Another." The meeting was preceded by an afternoon round table conference on purchasing problems, led by Everett E. Brainard.

Wyomissing, Penna.—Dinner meeting of the **Reading Association,** at the Iris Club. H. W. Elkinton, national director of the Philadelphia Association, led a discussion of the Robinson-Patman Act.

FEBRUARY 9

Tulsa—Open meeting of the **Tulsa Association**. Speaker: Samuel Mitchell, research engineer of The Buda Co., Harvey, Ill., "Diesel Trends of Today." This talk was of a non-technical nature. Purchasing agents concerned with more technical phases of the subject were invited to hear Mr. Mitchell's talk on "Inside the Combustion Chamber," given at a luncheon meeting of the Engineers Club the previous day.

Chattanooga—Meeting of the **Chattanooga Association,** at the Patten Hotel. A motion picture was shown, depicting the operations of the Youngstown Sheet & Tube Co.

FEBRUARY 10

Minneapolis—Meeting of the **Twin City Association,** at the Radisson Hotel. Speaker: H. P. Hartigan, field representative of the Social Security department. New officers of the association, as announced in this column last month, were presented at the meeting.

Buffalo—Dinner meeting of the **Buffalo Association,** at the Hotel Statler. A film showing the manufacture of cold drawn steels was presented by Clyde Lewellyn of the Bliss & Laughlin Co.

FEBRUARY 11

Chicago—Dinner meeting of the **Chicago Association,** at the Hotel Sherman. Speaker: Frederic Snyder, world traveler and commentator, "Keeping Ahead of the Headlines."

Springfield—Meeting of the **Western Massachusetts Association,** at the Highland Hotel. Speaker: George A. Renard, Secretary of the N.A.P.A., "From One P.A. to Another."

Los Angeles—Meeting of the **Los Angeles Association,** at the Jonathan Club. Speaker: Dr. Thurston H. Ross, Director of the School of Merchandising, U. S. C. College of Commerce, "General Business Conditions and the Outlook for 1937." J. L. Viereck, Purchasing Agent of Jewett, Inc., was the new industry speaker.

Philadelphia—Dinner meeting of the **Philadelphia Association,** at the Franklin Institute. The program included a conducted tour through the "Wonderland of Science," including the museum floor, chemical exhibits, Franklin paper room, and the special exhibit of the famed "transparent woman"; a dramatic presentation, the "Fire Show," in the Little Theater; the planetarium and observatory.

Seattle—Meeting of the **Washington Association.** Speakers: Ernest R. Bryan, former attaché to the secretariat of the League of Nations, and George M. Boyd, illuminating engineer of the Westinghouse Electric & Mfg. Co.

Dayton—Meeting of the **Dayton Association,** at the Engineers Club. District Vice President Arthur J. Goetz of Monroe, Mich., was an honor guest at the meeting. Speaker: Henry E. Voegeli of Waterbury Conn.

Dallas—Luncheon meeting of the **Dallas Association,** at the Dallas Athletic Club. Speaker: Joe J. Taylor, Editor of the Dallas *News*.

FEBRUARY 12

San Francisco—Annual joint luncheon meeting of the **Northern California Association** with the Golden Gate Paint, Varnish and Lacquer Association, at the Palace Hotel.

FEBRUARY 16

New York—Meeting of the **New York Association,** at the Builders Exchange Club. Speaker: Dr. James K. Hunt, Research Chemist of E. I. du Pont de Nemours & Co., Wilmington, "Chemistry in Industry," supplemented by sound motion picture, "The Wonder World of Chemistry."

Pittsburgh—Discussion meeting of the **Pittsburgh Association,** for members only, at the William Penn Hotel. General topic: "Purchasing Practice and Procedure."

Akron—Meeting of the **Akron Association,** at the Akron City Club. Speaker: Russell Weisman, economist of the Cleveland *Plain Dealer*.

FEBRUARY 17

Grand Rapids—Dinner meeting of the **Grand Rapids Association,** at the Rowe Hotel. R. E. Weaver of Lawrence Scudder & Co. led a round table discussion on the proper compilation of costs during a rising market.

Canton—Dinner meeting of the **Canton & Eastern Ohio Association,** at the Canton Club. The meeting was devoted to aviation affairs, and was attended by 74 guests in addition to 23 association members. Speaker: Major John Berry, Commissioner of Airports, City of Cleveland, "Transportation by Air—the Safe Way." In the discussion following Major Berry's address, the feasibility of establishing a municipal airport at Canton was seriously considered.

FEBRUARY 18

Oakland—Dinner meeting of the **Northern California Association,** at the Hotel Leamington. Speakers: District Attorney Earl Warren of Alameda County, "Crime"; and Lewis B. Avery, "Bali and Java." Mr. Avery's talk was illustrated with motion pictures.

Troy—Meeting of the **Eastern New York Association,** at the Hendrick Hudson Hotel. Round table discussion led by James Elder on the topics: Improper and unethical use of samples; special hours for salesmen's calls; the price complex; reciprocal buying; "third party" selling.

Detroit—Inspection visit of the **Detroit Association,** at the plant of Long Mfg. Division, Borg-Warner Corporation.

Cleveland—Executives Night banquet of the **Cleveland Association,** at the Cleveland Hotel. Speaker: Bennett Chapple, Vice President of the American Rolling Mill Co., Middletown, Ohio, "Frontiers of Business".

Toledo—Dinner meeting of the **Toledo Association,** at the Waldorf Hotel. Speaker: G. A. Stinchcomb of Heidelberg College, "Are Things What They Seem?"

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FEBRUARY 22

Bethlehem, Penna.—Business meeting of the **Lehigh Valley Association,** at the Bethlehem Club. President R. C. Schaeffer of Easton presided.

New York—Organization meeting of the **Metropolitan Purchasers' Assistants Club,** at the Hotel Brittany. The purpose of the organization is to associate the younger men in purchasing, to promote purchasing as a profession, and to carry on a general educational program through the presentation of lectures on pertinent topics and films of industrial processes. Meetings are to be held on the second Tuesday of each month, and an active membership campaign is now in progress. Officers of the group, with the company affiliation of each, are as follows: *Chairman of the Board*, Harold D. Mead, N. Y. & Queens Electric Light & Power Co.; *President*, George C. Ashley, Dairymen's League Co-operative Assn.; *Vice President*, Earl C. Goodwin, Dairymen's League Co-operative Assn.; *Secretary*, T. Turnquist, N. Y. & Queens Electric Light & Power Co.; *Treasurer*, J. A. Reynolds, U. S. Rubber Products. Committee chairmen are as follows: *Lectures*, G. R. Findley; *Plant Visits*, M. Torelli; *Educational*, A. J. Kahn; *Membership*, Neil Ray; *Publicity*, Charles Panzica; *Finance*, Andrew Gunthner; *Entertainment*, Charles Elmandorf.

FEBRUARY 23

Oakland—Luncheon meeting of the **East Bay Group, Northern California Association,** at the Lake Merritt Hotel. Sound motion picture, "The Wonder World of Chemistry" presented through courtesy of National Ammonia Division of E. I. du Pont de Nemours & Co.

New Haven—Meeting of the **Connecticut Association,** at the New Haven Lawn Club. Speaker: Harry Simmons, eastern sales manager of The Heinn Co., "Salesmen's Relations with Purchasing Organizations."

Providence—Meeting of the **Rhode Island Association,** at the Biltmore Hotel. Speaker: Fletcher Wood Taft, newspaper editor of Lexington, Mass., who discussed serious and humorous aspects of his profession.

Syracuse—Meeting of the **Syracuse & Central New York Association,** at the Hotel Syracuse. George Fenner led a discussion of commodity markets, and Harold Brown reported on the conference of Public Utility Buyers, held at Chicago earlier in the month.

Tulsa—Meeting of the **Tulsa Association.** The program was under the general auspices of the Tulsa County Safety Council, and covered three phases of the topic: Safety in the oil industry, on the highways, and in plants and factories. Speakers: J. D. Mc-

Camey of Carter Oil Co., Henry Boggess of Sinclair-Prairie Oil & Gas Co., and R. S. Huffman of Oklahoma Natural Gas Corp.

FEBRUARY 24

Buffalo—Dinner dance of the **Buffalo Association,** at the Buffalo Trap & Field Club.

Rochester—"Past Presidents' Night" meeting of the **Rochester Association,** at the Rochester Club. Motion picture, "Enduro—Republic's Perfected Stainless Steel," with explanatory comment by a representative of the Republic Steel Corp.

FEBRUARY 25

San Francisco—Factory inspection trip and luncheon meeting of the **Northern California Association,** at the plant of Western Sugar Refinery.

Worcester, Mass.—Dinner meeting of the **Worcester County Purchasing Agents Club,** at the Bancroft Hotel. Speaker: J. J. Connors of Atlantic Refining Co., "Lubrication". Motion pictures of sporting events and the development of transportation were also shown.

Seattle—Plant inspection visit of **Washington Association** members and their wives, at the Hostess Cake division of the Continental Baking Company.

FEBRUARY 25-26-27

Sacramento—Twentieth annual convention of the **California State, County and Municipal Purchasing Agents Association,** at the Hotel Senator.

Thursday A. M., Business Session. John L. Stewart of Santa Barbara, presiding.

Thursday, Luncheon Meeting. Welcome by Mayor Arthur D. Ferguson.

Thursday P. M., Business Session. Speakers: Louis H. Burke, legal counsel of the League of California Municipalities; and Will Merryman, managing director of the Retail Merchants Association, San Francisco Chamber of Commerce.

Thursday Evening. Banquet Session, in the Empire Room. Toastmaster, Ellis Purlee, registrar of the United States Land Office.

Friday A. M. Plant Inspection, at the plant of the Air Reduction Sales Co.

Friday A. M., Business Session. Speaker: O. P. Wheeler, chief of the division of research, Federal Reserve Bank of San Francisco.

Friday P. M., Business Session. Round table discussion of legislative matters affecting public purchasing.

Friday Evening. Stag dinner in the Elks Temple.

Saturday A. M., Business Session. Election of officers for 1937–1938.

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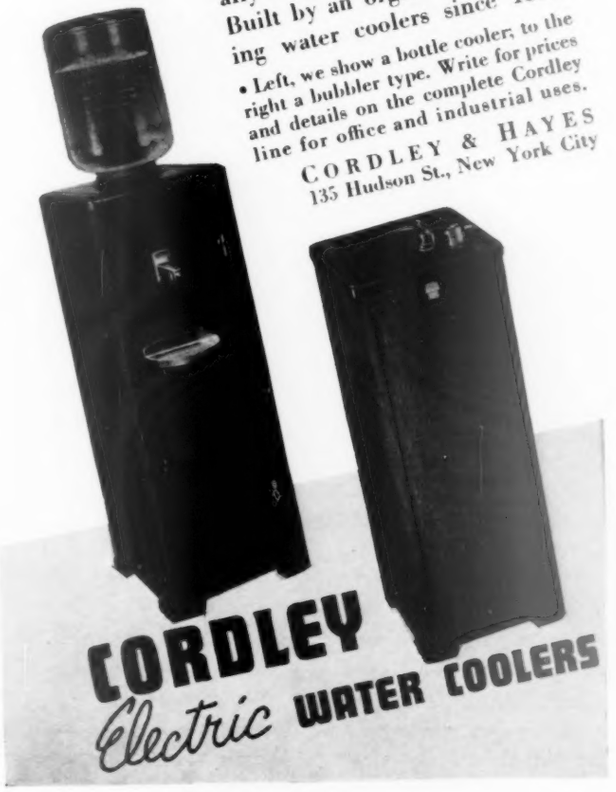

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A deep hush emanated from his office. The receptionist knew that if it was a little quieter than usual, he was in.

The majority of his associates were duly impressed by his quiet example as he sat there thinking. A few, less respectful, claimed that he merely sat. But they found little support for their view.

He spoke only on rare occasions, and then usually in monosyllables. If a nod or gesture would suffice to convey his meaning, even the monosyllable was omitted. His assistants were imbued with the urge to carry out his unspoken wishes without disturbing him, and consequently it was never truly known whether he had any definite wishes upon a subject.

Since he seldom spoke at all, he did not speak out of turn or say the wrong thing at the wrong time, and thus he acquired a reputation for tact and discretion. Since he never made promises, he never broke them, and thus he became known as a man who never deviated from his word. Since he never expressed himself in advance of a policy decision or similar development, he was deemed a man of rare and sound judgment.

He had an extraordinary talent for listening. Salesmen found this rather disconcerting. A great many of them found that frequently in their desperate monologues they unwittingly talked themselves down to his idea of an acceptable proposition, without an argument. The old timers generally contented themselves with briefly outlining their story and asking "Yes or no?"

They tell of one awe-struck cub who bravely asserted, "I'm selling carbon paper," and then could utter no further word. He lapsed into uncomfortable silence, and the two regarded each other speechless for about twenty minutes. When the youngster finally rose to steal away, he was astonished to have the p.a. press a contract into his hand. It was the beginning of a beautiful friendship.

Asked one time to expound his philosophy of the purchasing job, he coined the sentiment, "It is a great responsibility to spend some one else's money." With this pronouncement he gained the everlasting confidence of the management.

He was invited to sit upon important company committees, which he did with becoming gravity and contributed to the discussion such gems of thought as "There are two sides to every question" or "We can judge the future only by the past" or "I believe the suggestion is sound *in principle*."

When the time came for the president to be relegated to the chairmanship of the board, the directorate unanimously agreed that the p.a. would be a good safe man to put in his place. He accepted the appointment with a characteristically terse statement. "This is a great honor," he said, "greater than I deserve."

Some of his listeners marvelled at his modesty. Others were more impressed by his unerring instinct for the truth.

Booklets

Barnes-Gibson-Raymond of Detroit and Ann Arbor, Mich., are now distributing a new book of spring information. Semi-technical in nature, it is distinctly a practical compilation of essential and usable information for designers and spring-users, covering the entire subject in a comprehensive way, much of the data being presented here for the first time in published form. In addition to discussing the characteristics of the many spring types, numerous problems in design are actually worked out for easier understanding. Basic data is embodied in formulas and tables wherever possible for ease and accuracy in reference. The book contains 88 pages, handsomely printed and illustrated, with the subject matter conveniently grouped and clearly indexed.

*

Pheoll Mfg. Co., 5700 Roosevelt Road, Chicago, announces the new 1937 catalog and price list for screws, bolts, nuts and related items. A reference section contains the American standard screw thread specifications, dimension tables, weight tables and similar data. A cut index is a convenient and time saving feature of this 108-page book.

*

"Power by Smith" is the title of a new and very attractive booklet setting forth modern appliances and equipment for large or small plants in the harnessing of water power most effectively. It covers a wide variety of types and designs of turbine installations for every practical speed, and varying water conditions, as well as a complete line of accessories. Phantom type illustrations give a clear exposition of the principles involved, and photographs of typical industrial plants using the equipment indicate the wide range of practical application.

*

Bulletin 40 of the Hannifin Mfg. Co., 621-631 So. Kolmar Ave., Chicago, presents 24 special types of hydraulic presses individually designed to simplify the operations required and to increase production. Particularly notable is the high operating speed of the portable and stationery riveters and other yoke type presses.

*

The Lunkenheimer Co., Cincinnati, has just issued a new "Guide for Selecting Valves, Boiler Mountings and Lubricating Devices," identified as Circular No. 555. This is a 16-page illustrated compendium of such products, grouped by pressure, type, and use, in which a needed item can be quickly located by means of a marginal cut index. Widely used by buyers and specifiers of these products, the booklet is of standard filing size with subject index imprinted on the filing edge.

*

Catalog No. 1100A of the C. J. Tagliabue Mfg. Co., Park & Nostrand Aves., Brooklyn, N. Y., covers a comprehensive line of laboratory thermometers and hydrometers. It includes complete listings of A.S.T.M. thermometers with illustrations, fahrenheit and centigrade conversion tables, comparison scale graduations, corrections for emergent stems, and similar practical information.

*

The Bridgeport Brass Co., Bridgeport, Conn., announces the publication of a monthly "Copper Alloy Bulletin," starting in March. The first issue contains a digest of recent information and news of developments of interest to industrial consumers of copper and its alloys, edited for a practical and technically minded audience.

*

Carboloy Co., Inc., 2985 E. Jefferson Ave., Detroit, has issued a new wall chart (No. GC-71) size 18 × 12 inches, presenting in condensed form methods and recommendations for grinding single point Carboloy tools, wheel speeds, rough and finish grinding procedure, and methods for hogging off stock rapidly.

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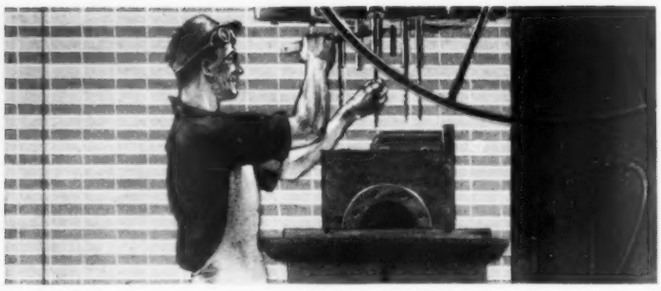

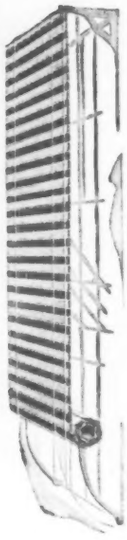

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T. W. Harris, Jr.

(*Continued from page 18*)

besides serving a term as president of the Middle States Lawn Tennis Association.

In 1918, he married Miss Dorothy M. Taylor, charming daughter of a prominent Wilmington family. Their family consists of four fine boys. Henry, the eldest, is in his Freshman year at Penn State, where he has already won honors in the chemical engineering course and has been initiated into the fraternity chapter of which his father was Commander twenty-five years ago. Tommy III, 14, and Billy, 10, are at the Wilmington Friends School, where Tom shows promise of carrying on his dad's athletic record. Teddy, the youngest, is five.

As a fitting place to bring up four lively youngsters, and at the same time fulfilling a long-cherished personal ambition, the Harrises have established their home on a forty-acre estate located about five miles out from Wilmington along the Brandywine, toward Chadd's Ford. There a comfortably remodeled farmhouse, surrounded by six acres of lawn, revives the old family name of "Quintynnes," recalling the Barbados sugar plantation which Tom's grandfather left to make his home in this country.

The boys have the fun, and the responsibility, of "running the farm," which now includes a pony, a cow a pig, a couple of dogs, and a flock of chickens. There's to be a duck pond in the meadow, too, as soon as Teddy is safely past the falling-in stage. Tom's chief interest here is a collection of several thousand evergreens, many of which he has carefully transplanted and nurtured from tiny sprigs to tall and stately trees which greatly enhance the beauty of the estate.

Altogether it is a pleasant and well rounded picture. Tom Harris affords a practical demonstration of the fact that the fine sense of values which has marked his work as a purchasing agent can be carried over as a similarly fine sense of values in the business of living.

—S. F. H.

An Economist looks at the Utility Problem

(*Continued from page 16*)

statement catches attention, for in the words of Mr. Ripley, "Believe it or not," it refers to domestic service. It poses the fanciful question as to whether there is an invisible clause on the rate schedule reading:

"All in excess over 1935 annual average, 9.15 mills per kwh." We may look at these figures as representing a great achievement in the industry, and such it is. I am not disputing that point. I am simply trying to point out that much of this demand has and in the future will only be obtained by a pricing policy which will force the industry to cut costs to the bone.

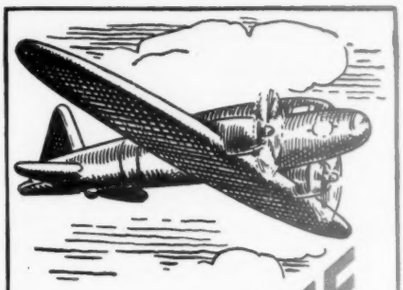
In view of what has happened during the last few years, and in view of the ever increasing competition on the part of the government, I do not expect that gross revenue will increase in nearly the ratio at which gross output will increase. Further, I expect an increase in operating expenses, so that with a decrease in the rate of the gross there will be a greater decrease in the rate of the net. This will tend to leave a relatively smaller portion to be allocated as a return on the capital investment, and this will mean that every effort must be made to reduce capital costs, proportionately.

Your function in this entire process of reducing capital investment is clear. While you may not be in a position to dictate many of the major policies of the industry, yet within your own field you will be asked to continue to carry on with all the keenness and precision of the engineer, but you must modify your actions to conform to the economic issues involved.

In many respects the engineer and the economist think alike, but I have often been astonished how often they take opposite points of view. Unless the engineer is fully aware of the total effect which his action imposes upon the entire industry, he is apt to think in terms of physical efficiency rather than of economic efficiency. The economist, on the other hand, may be so concerned with this cost and price relationship that he may adopt too short a point of view, and sacrifice future possible benefits in the interest of present lower costs. Fundamentally, however, the engineer must be aware of his prejudices. He is interested and intrigued by mechanical perfection, and his admiration for such perfection often warps his judgment in the cost and price relationship in which he finds himself. From the engineering point of view the pyramids represent one of the seven wonders of the world; to the economist, looking as he does primarily at cost and price relationships, they represent wasted effort.

In your work this difference in attitude becomes very significant. In the future you will be in a position where often you will be forced to sacrifice some mechanical perfection in the interest of lower costs. On the other hand, you must not look at cost alone, for this may prove unwise in the long run. Herein lies the problem with which you must deal. Assuming that you will make the tremendous purchases that are now being forecast, if you lean too much toward the engineering point of view you are liable to saddle upon the industry a tremendous increase in investment, just at a time when such investment should rise but slowly in proportion to the capacity of the plant.

It is this new situation which makes it necessary to modify many of the ideas which you developed in that happy period when demand was outrunning supply, and when rate reductions came as a result of lower costs. In that period the industry stood in an unprecedented position. Costs were not significant then, for demand was sufficient to justify any price the industry desired to charge. But even in those days you were taught to cut costs, and by your achievement rates were reduced. But in that period lower rates followed lower costs. In the future the process will be reversed, and lower costs will follow lower rates. Your super-salesman of today is selling electricity at a price which



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is often below the cost of production expecting that you will meet this price by reducing costs.

In many instances the industry is cluttered up with obsolete equipment which it cannot write off as rapidly as it would like to because revenues are not sufficient to permit such a policy and still leave enough to pay dividends and meet other necessary expenses. This indicates that there has been a tendency to overbuild the industry. We often build as if we were building for the ages, only to find that tomorrow we abandon what we had such high hopes for today. Recently an engineer testified that of every four generating plants built, three were abandoned because they were obsolete and only one because it was worn out. To what extent this may be true of other installations I am not able to say, but if this is typical of the entire industry, then from the economic point of view at least, I think we must admit that the industry has failed to cope with this problem.

Since you stand in a strategic position in respect to this whole problem, you will have to bear your share in the attempt to mitigate the difficulties that this problem will incur. The advances made in the field of transportation should be carefully studied, for some remarkable progress has been made which has tended to reduce capital costs and still give improved service. Then too, though it seems that government competition is a mistake, I still want to point out that the industry has advanced technologically because of this competition, and that as a result the industry is in a better position to reduce costs.

Furthermore, you should use every device possible to force the producers of your equipment to adjust their thinking in line with yours. In the past there has been a tendency to be satisfied with the progress that was being made by our large and well-established industrial producers of equipment. Once a certain degree of success is attained, industry tends to be satisfied. It is this static condition that you must constantly seek to overcome. In your search for ma-

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terials and equipment, you must remember that it is not always the largest or best known firm which can give you the best service. You must be in search of new producers and new equipment to secure those economies which will be so necessary to the industry.

If you once realize that a saving in capital investment, however small, means not only an initial saving, but reduces expenses during the whole lifetime of the equipment on which that saving is made, you will appreciate why it is that such pressure is being brought to bear upon you. If you could save as little as 10% in your purchases, the annual saving would amount to about 5% of gross revenue, and this is a very significant amount. Remember also that as the industry is operated today, almost 60% of the gross operating revenue is allocated to capital costs of one type or another. If savings are to be made in the future which will reduce the price of electricity for all uses, much of this saving must come out of capital.

This, then, is the challenge that confronts you. Remarkable as your achievements have been in the past, they will seem dwarfed into insignificance if you can solve this problem and reduce costs so that the predictions of the industry will be fulfilled.

The South Bend Lathe Works, South Bend, Ind., have published a new 24-page catalog announcing their new 1937 model 9-inch workshop precision lathe. More than 150 illustrations show the many new styles, features and applications of the new back-geared screw-cutting lathe, which cuts screw threads from 4 to 40 per inch, and which has an accuracy in the alignment of all parts to within .001 inch.

•

Air Reduction Sales Co., 60 E. 42nd St., New York City, has issued a booklet on acetylene fuel gas for welding and cutting, outlining the history, heat values and efficiency of the fuel. Particularly striking is a diagram on the center spread indicating the comparative consumption of oxygen by various types of fuel gases, including acetylene, propane, natural and manufactured gas, indicating the economy of the first named fuel.

Purchasing Procedure

(*Continued from page 24*)

partment, upon which instructions are given as to the vendor to contact and an order number is given. At the same time the department in need informs the Purchasing Department the number of the requisition to be issued to cover the transaction and when writing this requisition includes the assigned order number in the body under the description of the material. The department ordering the material may then pick up the material or the Purchasing Department may notify the vendor to deliver, depending on the circumstances of the occasion.

Our branch offices too far removed from Kansas City to handle these emergencies in the manner I have just described are each supplied with a block of order numbers which the Purchasing Department reserves for their use, and are for such emergency and other purchases which we consider wise policy to purchase from local suppliers, the value of which is greater than can be paid from local cash funds. They are also supplied a record sheet on which these numbers appear. The branch office fills out a record showing the requisition number, vendor, material purchased and date of requisition, and when writing the requisition shows the order number used. This is checked in the Purchasing Department with the record of order numbers assigned to the branch to avoid duplication and non-use of numbers. The order is written and mailed by the Purchasing Department at Kansas City. Inasmuch as the final material receipt is typed at the same time the order is written and invoices for the material will be audited and paid in Kansas City, if the material has been received the branch authorizes the Purchasing Department to fill out and sign the final material receipt, this authorization being shown in the body of the requisition by means of a rubber stamp properly signed and dated.

Other purchases which branch offices are authorized to make are miscellaneous requirements deemed ad-

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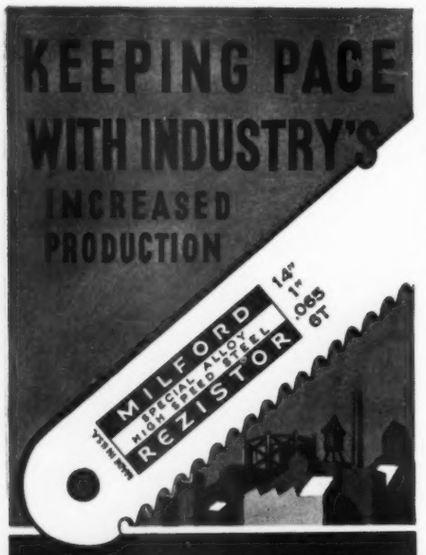

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There is a MILFORD Mill Supply Distributor in your locality, ready to give you production facts and figures, or to quote prices.

THE HENRY G. THOMPSON & SON CO.
NEW HAVEN, CONN.
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visable to procure from local vendors and as good will is a consideration, prompt payment is important, especially in small communities. Such purchases are handled on another form which is in triplicate. This is a condensed order written by the branch office, valid when signed by the local manager and authorizes the delivery of the items described. It requests the vendor to furnish an invoice either to the bearer or to the local manager and states payment will be made promptly by check. It also requests him to inform the manager if payment is not received within five days. The original is the vendor's copy on which he obtains a signature receipting for the material. The duplicate is sent to the local cashier and when properly receipted and approved is authority for payment. The triplicate is retained by the manager. The Purchasing Department in Kansas City checks all such purchases from the vouchers issued to reimburse the cash funds of the branch office.

It has been our aim to keep the methods in use in our Purchasing Department simple and at the same time efficient. Not a single record is maintained in the Purchasing Department if a suitable record must be kept elsewhere and thus we have avoided duplication of effort. For that reason, while we do maintain a past purchase visible card record of purchases of items not carried in stock, we keep no such record on any item which is, because the past purchase history on stock items is readily available from the lot records in the Stores Auditing Department. Likewise, we keep no record of invoices. That information also is conveniently available in the Stores Auditing Department.

While our Purchasing Department is not concerned with the work of checking invoices and approving them for payment, except those applying to orders on which no price is shown, it *is* the duty of the Purchasing Department on notification to clear up all discrepencies and to effect a proper settlement.

Our Purchasing Department also makes the necessary arrangement with vendors for the return of material for credit, although we do not follow up for the receipt of credit unless we are notified it is unduly delayed.

Of course, as in most Purchasing Departments, it is our responsibility to dispose of scrap materials and obsolete equipment to best advantage and in these instances we are responsible for collection and such transactions are on terms of cash in advance. We also handle so-called accommodation sales to customers and contractors of special items carried in our stock.

In disposing of obsolete items which are still suitable for use in their original form such as motors, generators, boilers, etc., we have found it expedient to delegate one of our Power Sales engineers to handle this as advantageous disposal of such equipment entails the transmission of considerable detailed engineering information, inspection by prospective purchasers, etc.

While it is true that we keep no records if the information may be had from some other department, we find that in addition to those records I have already described we must have the following:

Source of supply or commodity record;

Special conditions and terms of payment record;

Volume purchase record of—

A—Contracts providing refunds based on annual or monthly total purchases;

B—Distribution of business to certain classes of suppliers in recognition of reciprocity with users of our service;

Gasoline purchases for purposes of computing State taxes;

Sales work orders;

General correspondence;

Purchase contracts;

Catalog library;

Market trend data;

Record of workmen's compensation and liability insurance carried by suppliers whose orders from us require them to do work either on our premises or outside their own shops;

Specification file;

and several others of lesser importance.

Pick-up and Delivery

(*Continued from page 21*)

small, espoused the cause of the railroads before the Commission. They testified in the main that they had sought the service for years, but that in justice to themselves they could not patronize the railroads when they could obtain cheaper transportation elsewhere.

Equally important in developing pick-up and delivery service has been reduced transit time. There has been much argument as to whether it is time or price that was responsible for the loss of traffic. For my part, I would say that it was both. Within recent years, freight trains have been placed on definite schedules and now departure and arrival of merchandise is as regular as passenger service. Freight schedules have been quickened appreciably so that today it is not uncommon to make overnight deliveries between points 400 miles apart, and you can expect much more improved service in the future. It does not seem possible that third morning deliveries for hauls over 1,000 miles can be improved, but I am confident they will be.

Nor is modernization being confined to transportation itself. Onerous rules and packing requirements are being modified. Classification ratings are being simplified and charges are being carefully scanned to remove resistance to sales.

Methods of handling have been changed materially. Many economies have been effected in operation, including greater concentration of station facilities, reduced switching expense, heavier loadings per car, less loss and damage, substitution of motor trucks for box cars and modernization of clerical work.

A distinctive feature of the arrangement is a provision whereby the railroad makes an allowance of five cents per one hundred pounds to those patrons that find it more convenient to arrange for their own pick-up or delivery. This has been particularly helpful to shippers that are not certain when the material will be ready for shipment. Rather than have the railroad make several calls, they arrange to deliver the freight themselves.

Coupled with the pick-up and delivery service, the railroads inaugurated a C.O.D. service. Formerly, the only way that the manufacturer could protect himself on doubtful accounts was through the issuance of an order-notify bill of lading, which required passing through banks and made for delays. The railroads will now, for a small fee, collect the invoice price or any amount specified at the time of delivery and will refund direct to the shipper.

Finally, I want to point out with what ease and facility the full advantages and attractions of the service may be enjoyed to our mutual profit. You simply call the nearest railroad freight agent by telephone, tell him your shipments are ready to go and he arranges the entire job. There is nothing further for you to do.

A responsible trucker, hired by the railroad, picks up the shipment at your door. It is taken to the freight station, placed on a fast train and. at destination, is unloaded and delivered by a railroad-hired truck to the door of the consignee. The railroad assumes full responsibility for the entire move from your door to the consignee's door and the shipment is handled promptly, efficiently and with a minimum of clerical detail. You pay only the regularly quoted railroad station-to-station rate. Through this medium you can reach over 65,000 communities throughout the country. It is the most wide-spread service offered by any agency of transportation.

"Magnetic Handbook" is the title of a new 170-page loose-leaf manual issued by the Stearns Magnetic Mfg. Co., Milwaukee. It contains technical data, descriptions and illustrations covering various phases of magnetic engineering, such as separation, concentration and purification of ores, minerals, sands, foodstuffs, grain, pottery and porcelain slip, pulverized clay, etc.; protection of crushers, grinders and pulverizers; different processes of wet and dry magnetic treatment; friction devices.

Here is an example of Signode Bulkbinding of carload shipments. While a mixed shipment of steel drums and barrels, etc. is shown, many other commodities may be also bulkbound.

This Carload Shipping Method PAYS DIVIDENDS

● Shipping costs by ordinary methods, compared with those when Signode Bulkbinding is used, show the latter *sharply less.* The difference is money *not spent* for dunnage and other packing materials, freight bills *decreased,* and damage claims *eliminated.* Every cent not spent is as good as finding the money—a real profit which can be credited to the shipping department. The example pictured above no doubt varies widely from your own product, but Signode Bulkbinding has been applied to over 200 different products—and in every case paid dividends.

Let us send a Signode Packing Engineer to check over your shipping problems with you. Whether they include carload shipments, handling single packages of any size and shape, or both, substantial savings are probable . . . and we're ready to prove it!

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Obituary

MAJOR LEWIS EDWIN STEELE, 61, for 20 years military store-keeper, and for the past year and a half purchasing agent for Virginia Military Institute, died at his home in Lexington, January 14th.

HERMAN HASE, 61, for the past 20 years purchasing agent for the Burro Mountain branch of the Phelps-Dodge Corp., died of a heart attack February 5th, at Silver City.

CHARLES B. SANFORD, 69, for many years purchasing agent and general manager of the Sessions Clock Co., died at his home in Forestville, Conn., February 5th, of a heart attack.

HUGH M. FREER, 68, vice president in charge of purchasing, traffic and equipment for Standard Brands, Inc., died February 11th at his home in New York City, of a heart attack.

BURTON R. NIEMEYER, 29, Assistant Purchasing Agent for Kent County, Michigan, died suddenly at his office in the county building, Grand Rapids, February 11th.

JOHN L. MOSELY, for the past thirty years purchasing agent for Seattle School District No. 1, died at his home February 16th.

J. F. HOLZEMER, 62, for more than thirty years purchasing agent for the T. & O. C. and the New York Central Railroad, died at his home in Columbus, Ohio, February 27th.

GODFREY J. KAUFMANN, 68, for the past four years purchasing agent for the Multnomah Hotel, Portland, Oregon, died at his home in that city February 12th, of shock suffered in a fall on January 7th.

ROBERT MILTON KETCHUM, 45, Manager of Purchases for the General Petroleum Corp., Los Angeles, died at his home in that city, February 14th, after an illness of several weeks with a heart affliction. Mr. Ketchum, a native of Iowa, came to Los Angeles in boyhood and has been prom nent in business, civic,

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and fraternal circles. He was a past president of the Los Angeles Purchasing Agents Association, national secretary of the boiler committee of the American Petroleum Institute, and active in the Oil Company Buyers Group of N.A.P.A.

GEORGE E. SMITH, 54, Purchasing Agent of the Line Material Co., South Milwaukee, died of pneumonia at St. Lukes Hospital, February 16th. He had been associated with the company for a quarter of a century, and became purchasing agent fifteen years ago.

Glass Industry

(*Continued from page 37*)

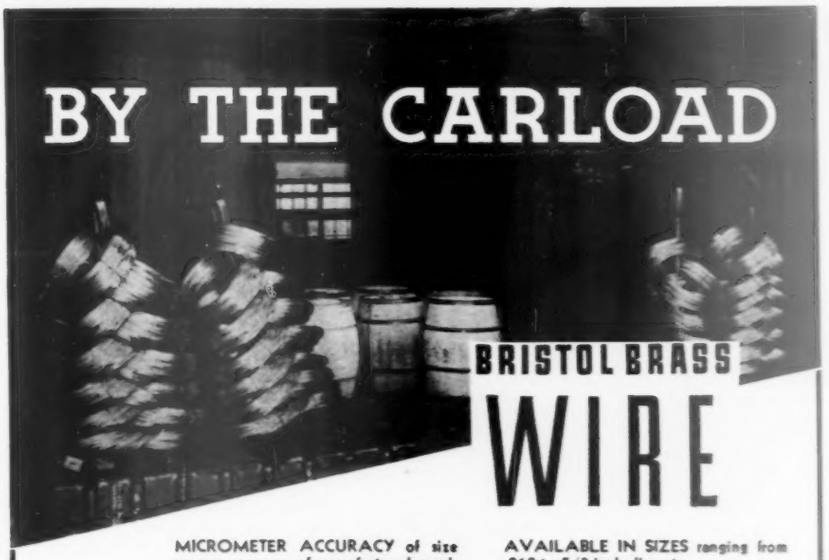
periodic intervals, and this raw material is slowly reduced to the molten state so that by the time it has reached the opposite end of the tank it is white hot, molten glass, not unlike hot taffy.

At this end of the tank, the glass slowly flows between two huge water-cooled rollers (which are adjusted to give the glass the desired thickness) and onto conveyor rollers which carry it, in a long continuous strip through the annealing oven, or lehr, where it is cooled under gas flames.

At the opposite end of the lehr it receives its first of many inspections and is cut off in large sections of rough plate, after which it is imbedded in a plaster of paris solution on the top of flat-topped miniature cars which, in a continuous line, pass slowly under the enormous grinders and polishers.

It is here that the rough surface is removed and the glass is given that velvet-smoothness and exquisite luster. Severe inspections are then given to the glass, and it is marked so as to be cut in the proper sizes to eliminate imperfections.

With these developments, is it any wonder that the flat glass industry has been so firmly established in the Pittsburgh area? The ghost of the pioneer John Gallatin must wear a very satisfied smile as he thinks back over what he started in New Geneva one hundred and forty years ago.



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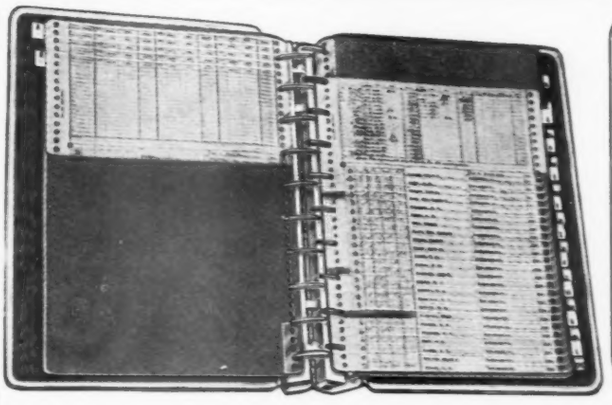

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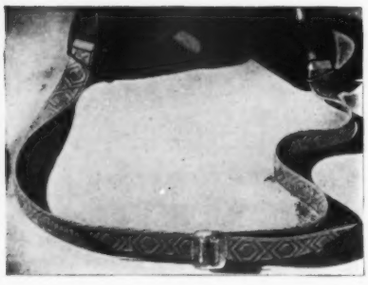


GOGGLE HEADBAND

No. 364

HEADBANDS FOR replacement use or special adjustment are made of rubber, without any cotton fabric construction or metallic fittings. The ends are made in wedge shape for attachment to the goggle frame, and the surface is finished in a non-skid design. There is ample length for any desired adjustment, such as over a cap, etc.

See coupon below

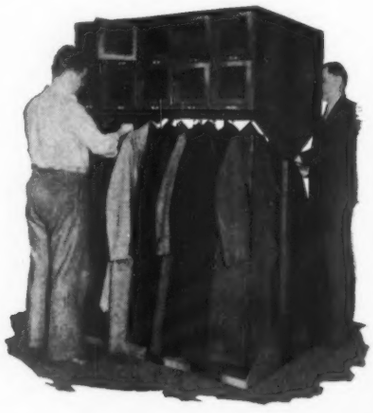
STAPLING TOOL

No. 365

A NEW FEATURE OF design in this stapling tool is an opening assembly at the nose, operated by a trigger, to expose and remove staples which may jam under the impact of the hammer, thus facilitating continuous operation with a minimum of delay. The tool handles fine or wide-wire staples, or the divergent-point cohered type. The lever-operated style illustrated can be operated with one hand, having an adjustable cap for controlling tension in the driver spring. There is also a plunger type, which is guided with one hand and operated with the other by delivering a blow on a soft rubber plunger.

See coupon below

CLOTHING STORAGE CABINET

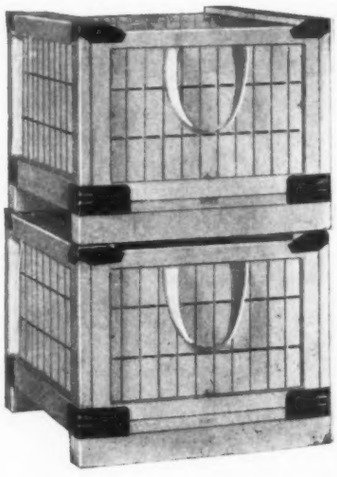


No. 366

COMBINING FACILITIES for hanging up garments and with separate locked compartments for personal belongings, this new cabinet fixture provides a convenient and practical answer to many situations in office, factory, or institution. Twenty persons are accomodated by this unit, which occupies $12^1/_2$ square feet of floor space, and which may be used in a general locker room or moved about to meet requirements in various departments. The coat hangers are not removable, and can be supplied with chains to pass through the sleeve of a garment and lock it to the hanger. Construction is sturdy, entirely of steel, rigid and durable.

See coupon at left

SKID BOXES



No. 367

THESE SKID boxes are of woven white elm slats, which combine flexibility and sturdiness in use. The slats are woven with wire and attached to an elm frame mounted on skids measuring $2^3/_4 \times 2^1/_4$ inches. The corners are reinforced with 14-gauge steel corner pieces, and the steel angles attached to the upper side cleats are slotted so that the boxes can be dragged by means of a hook. The construction is such that they can also be stacked upon each other, or lifted and carried on tiering machines or shop trucks. Stock sizes range from 2 to 18 bushels. Furnished without skids if desired, or can be equipped with casters.

PURCHASING
11 West 42nd St.
New York, N. Y.

Please send complete data on the New Products listed by number below:

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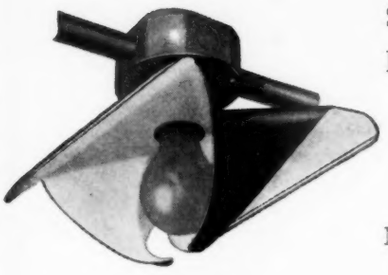
Name.....

Company.....

Address.....

City.....**State**.....

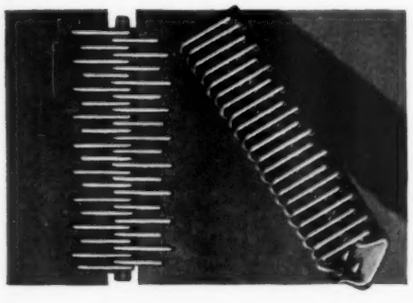


STOCKROOM LIGHT

No. 368

LIGHTING PROBLEMS in shelves and bins along narrow stockroom aisles are solved by this new fixture which attaches directly to an outlet box. The light is directed down and to the sides for complete and uniform illumination, while curved flanges cut out direct light from the aisle and eliminate glare from this source. The unit is of rust-proofed iron, finished with three coats of fired porcelain enamel, inside surfaces being white, while the outside is a neutral gray. The reflector is available in a range of sizes for lamps from 50 to 200 watts. The design is such as to permit easy cleaning.

See coupon page 56



WIRE BELT HOOKS

No. 369

A NEW LINE OF carded belt hooks combines serviceability resulting from high quality wire for hard and continuous usage, and convenience resulting from the mounting on specially processed cards that hold the hooks firmly, add strength, and permit the operator to cut off the desired width without destroying or disturbing others. The hooks may be applied with any standard lacer, or with a special machine that is now available.

See coupon page 56

No. 370

STEEL DRUM OPENER

THIS COMBINATION tool affords every facility for opening various types of steel drums. As shown, it embodies a screwdriver for removing screws or for puncturing and prying off metal caps and seals, a pair of lugs to loosen ribbed plugs and small double-lug plugs, a square opening for square-head plugs and a U-prong for small ribbed plugs, a square and a hexagon lug for recessed plugs, and a reverse chisel edge to pry off caps and seals. The tool is made of malleable iron, either black japan or galvanized finish, and weighs 20 ounces.

See coupon page 56

NEED ANY NICE "OX" CHAINS?

"O-X" stands for ox—the draft animal that is so popular in Porto Rico, where McKay A-No. 1 *quality* is just as important as in other parts of the world. Whether it's ox Chain or just plain proof-coil Chain, we're mighty proud of our Quality—constantly assured by **"McKay's 50 years of knowing how."**

Send your Chain inquiries or orders to . . .

THE McKAY COMPANY
McKAY BUILDING PITTSBURGH, PA
(Formerly U. S. Chain & Forging Co.)

BUY Trojan GUMMED TAPE

The most popular tape on the market. The extra strength of Northern Kraft — faster and permanent sticking—full basis weight, width and length.

Trojan GUMMED TAPE
The Gummed Products Co.
OFFICES TROY, OHIO MILLS
MAKERS OF STERLING "TREAD" GUMMED TAPE
Sales Branches: Chicago, Cincinnati, Cleveland, Los Angeles, New York and St. Louis.

A FASTNRITE
new idea in
PAPER FASTENERS

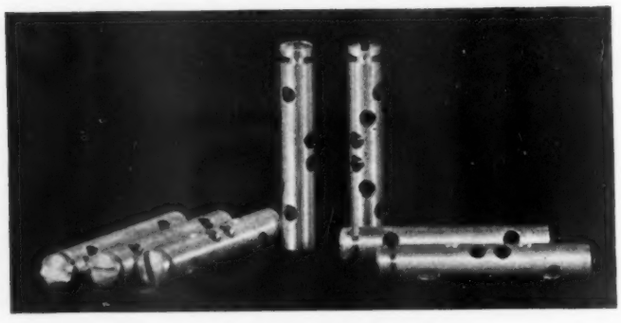
IT WAS bound to come and here it is—FASTNRITE—the new day, new way paper fastener that binds without staples, thread or glue.

FASTNRITE has literally dozens of applications throughout factory and office. Fastens 2 to 12 sheets of paper (up to 20 sheets of onion skin), *seals pay envelopes, small parts envelopes and paper bags of almost every description.*

FASTNRITE also binds circulars, enclosures and papers of all kinds. It needs no refills—always ready to operate—the first cost is the last. Saves space in files, prevents mutilation of papers, operates silently and never gets out of order.

SEE FASTNRITE at your stationers or write us direct for illustrated folder and demonstration sheets.

PROGRESSIVE MECHANICAL CORP.
630 FIFTH AVENUE, NEW YORK.



"Shafts"

A group of shafts which hold the cobalt steel magnets in the Hull "Streamline" Auto Compass. Six holes had to be drilled cleanly, and exactly through the center; also one end slotted and the other tapped.

A precision job of many operations done in the stringiest of metals, ALUMINUM! Exhibited here as just one more example of the wide variety of work included in "Peck Service."

SEND FOR THE PECK CATALOG

It gives much valuable information on springs and screw machine parts. It's free.

PECK SPRINGS
AND SCREW MACHINE PARTS
The Peck Spring Co. - 10 Walnut St. - Plainville, Conn.

UTILITY LIGHTING FIXTURE

No. 371

THIS NEW LIGHTING unit is mounted in a metal box with reflector, the whole unit measuring $14^3/_8 \times 12^3/_8 \times 5^7/_8$ inches. It is fitted with a mogul socket for lamps up to 500 watts, and an 8-foot extension cord. It can be used to supplement overhead lighting by placing the fixture on a wall shelf, the light being directed upward at an angle and reflecting down from the ceiling. By placing a glass over the open top of the box, it is also useful for tracing work in the drafting room.

See coupon page 56

SPRINKLER SHUT-OFF

No. 372

WITH THIS NEW tool, it is possible to shut off a sprinkler head that has gone into operation, whether accidentally or otherwise, without having to shut down the entire system. The operation is simple, the hook end being placed through the head ring, and the hand lever pulled down. A number of head designs are available to suit various arrangements and mounting of the heads, and the pole unit is long enough to reach ceiling sprinklers from the floor. The unit is finished in red and green so that it may be visible for a distance.

See coupon page 56

GRINDING MACHINE FOR CIRCULAR KNIVES

No. 373

CIRCULAR KNIVES, either single or double bevel, can be sharpened on this machine. The knife is mounted on a spindle with adjustable arbor to accommodate either solid or

sectional design. The spindle is revolved by a motor and V-belt connection. Flanges are provided to support the thin knives against pressure from the grinding wheel. Two models are listed, one for diameters up to 14 inches, and one for diameters up to 20 inches. The grinding wheel is 6 × 1/2 in., driven by a 1/4 hp. ball-bearing motor. The motor mounting is on a double adjustable slide, with graduated index to set to any desired bevel, and swivel adjustment. Wheel feed is by hand, through a screw and hand-wheel, and adjustable gibs are provided for taking up wear. The standard equipment includes wheel dresser and control switch; wet-grinding attachment is available if required.

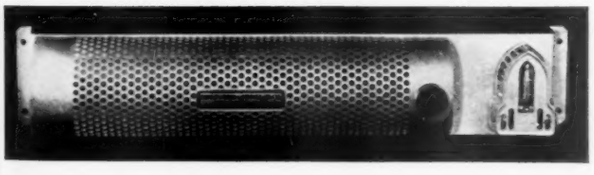
See coupon page 56

DOOR HOLDER

No. 374

A SIMPLE AND PRACTICAL door holder has been developed which will hold any swinging door from movement in either direction, and at any desired position. It consists of a flexible metal strip that slips under the door, with a corrugated soft rubber cushion at either end that firmly and quietly grips the floor and prevents motion of the door. It is not attached to the door and thus can be moved from room to room as required. It will not mark or mar floor or door.

See coupon page 56



SPACE HEATER

No. 375

SPECIALLY DESIGNED for use in sprinkler valve houses to prevent freeze-ups in dry-pipe valves, this unit consists of the heating element, control thermostat, thermometer, pilot light and

ARMSTRONG
Drop-Forged
"C" Clamps Lathe Dogs

These are lifetime tools that do not spread or give—that can be depended on not to slip. Drop forged from special open hearth steel, they have extraordinary stiffness, toughness . . . strength. Screws have double wear threads, are of special steels hardened at the point. They will not "upset." Hubs of these Lathe Dogs are over-size, large enough to permit re-tapping, to give double life.

Sizes and Types for every machine shop and tool room use, each an ARMSTRONG TOOL—the finest that can be made. *Write for Catalog B-35.*

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
303 N. Francisco Ave., Chicago, U.S.A.
Eastern Warehouse & Sales, 199 Lafayette St., N. Y.
San Francisco London

MARS LUMOGRAPH
THE *Plus Value* DRAWING *Pencil*

Not just another drawing pencil, but a drawing pencil with unique features that make it the last word. Experience gained by Staedtler during 275 years of fine pencil making has produced in Mars Lumograph the world's finest drawing pencil.

You not only make every drawing better, you also obtain perfect reproduction *direct from original pencil tracing.*

This feature alone, eliminating the necessity to "ink in" is saving drafting rooms 10% to 40%.

A special light resisting element in Lumograph leads makes it possible to render lines of an opaqueness approximating India Ink. Unusual skill in grinding the materials composing these leads (materials ground to colloidal fineness) brings you a lead, uniform from end to end and without a "hard-spot."

Cased in finest Southern Cedar, with handsome blue polish and marked in gold—it's no wonder draftsmen acclaim Mars Lumograph the world's **"Plus Value"** drawing pencil.

Obtainable in 13 degrees (EXEXB to 6H) 15¢ ea.

Mail coupon today—Test them to your own satisfaction.

J S. Staedtler, Inc. - 53-55 Worth St., New York
Gentlemen: Enclosed find $..... Please send.....Mars
Lumograph Pencils #2886 in following degrees.....
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• Lyon Steel Shop Boxes are saving thousands of dollars for industry by facilitating the storage and handling of small parts. They eliminate the fire hazard and handling dangers of bulky, splintery wood boxes . . . actually cost less than wood boxes when economy of floor space, long life and low maintenance cost is considered. There is a Lyon Steel Shop Box for every small tool or stock handling need. Write for Catalog No. 611.

LYON METAL PRODUCTS, INCORPORATED
3303 RIVER STREET AURORA, ILLINOIS

LYON *Steel* SHOP BOXES

GEARED
to meet the Urgent demands
OF YOUR PRODUCTION LINE

Consider these points when you look for a dependable source of spring parts:

INTELLIGENT HANDLING OF SPECIFICATIONS
PROMPT, CERTAIN ACTION IN TOOLING UP
DELIVERIES TO MEET YOUR PRODUCTION
UNIFORM QUALITY FROM START TO FINISH
ONE SOURCE OF SUPPLY FOR MANY PRODUCTS
EFFICIENT PLANNING FOR GREATEST ECONOMY

Controlled quality from steel to finished part is Barnes' answer to the day's demand for production and still more production. A modern steel mill owned and operated by Barnes is capable of producing stock for almost any requirement, every day. Large amounts are always on hand for quick conversion into the kind of spring you need.

The Wallace Barnes Company . BRISTOL, CONNECTICUT
DIVISION OF ASSOCIATED SPRING CORPORATION
SPRINGMAKERS FOR MORE THAN THREE QUARTERS OF A CENTURY

Barnes-made SPRINGS

Speedy and Accurate
Hand Sawing

is now possible. This revolutionary, heavy duty hack saw frame, drop forged from hard aluminum alloy has changed the entire hack saw picture. Absolutely rigid with machine-type blade holders, it holds an unbreakable, high-speed-edge blade at machine tensions. Double handed grips increase power and accuracy. Improved design applies power below the line of cutting and prevents the blade from sticking in the cut. Try it and you will be satisfied with no other. Your dealer will demonstrate.

Write for Circular

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
306 N. Francisco Ave. Chicago, U. S. A.

Bituminous Coal

MINES: Scalp Level, South Fork, Hastings and La Rayne Districts of Penna., and Fairmont District of West Virginia.

SIZES: Lump — Egg — Nut — Pea — Stoker — Mine Run—Especially Prepared Coal for Pulverizing.

CORTRIGHT COAL COMPANY

PENNA. BLDG. PHILADELPHIA
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outlet box, all mounted on a rigid pressed metal frame. The heating element is protected by a perforated metal guard that does not retard the circulation of heat. Installation is simple, requiring only four screws to attach the unit to the valve house wall, and a single electrical connection for the completely wired assembly.

See coupon page 56

SPEED LATHE

No. 376

THIS 12-INCH precision lathe is a general utility machine for metal working plants, specially adapted for accurate finishing operations. It will swing 12 inches diameter over the bed or 9½ inches over the carriage, and will turn 36 inches long on 60-inch bed. The belt-driven headstock is 12½ inches long, 10½ inches wide. Lathe bearings have adjustable split bronze bushings grooved for oil passage; ball bearings are used on the motor headstock. The spindle has white bronze ring-oiling bearings adjustable to wear. Tailstock is of open-side design, 7 × 6 inches. Floor space required: 65 × 24 inches.

See coupon page 56

UNIT HEATER

No. 377

THIS VERTICAL TYPE unit heater has been developed for installations where a single heater must serve large areas. It is equipped with four outlets, with various types of directional

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Great Britain

30 DAY FREE TRIAL OFFER.

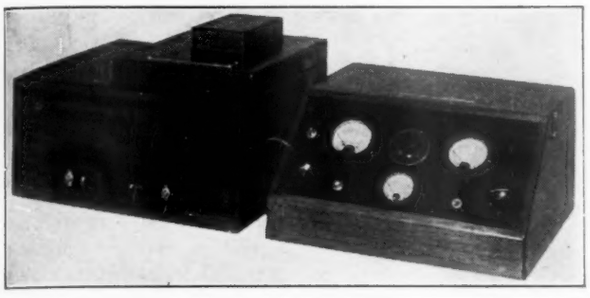
NO BELT SLIPS with VACUUM CUP METAL PULLEYS

GUARANTEED to:
Eliminate belt slippage and power loss because the belt is sealed to pulley at vacuum contacts . . increase life of belts and equipment . . enable machines to take larger cuts and operate at maximum capacity . . wear indefinitely . . keep belts from flying off . . Sizes from 2" up to 72" . . recommended for short center drives . . Try one at our risk on your worst drive.

Vacuum Cup Metal Pulley Co., Inc. 1010 Ford Bldg. Detroit, Mich.

vanes to distribute the heated air according to the particular requirement. A fan motor operating at 1,140 rpm. is mounted on top of the housing, driving the air downward through the steam heating coils to the outlets. A special cradle-type mounting supported on springs has been devised for the coils, so that they are unaffected by expansion and contraction or by strains on the housing. There are 28 sizes in the line, and four diffuser arrangements, to meet every normal situation. Sizes range from $27^1/_4$ to 30 inches in overall height, and from $17^1/_4$ to $29^1/_4$ inches in width and depth.

See coupon page 56



PAPER FORMATION TESTER

No. 378

UNIFORMITY AND FIBER structure of paper is tested by these instruments by measuring the opacity of a sheet. The unit at the left contains a light source and a photoelectric cell. A sample of the paper, 8 inches in diameter, is rotated rapidly between the two. The unit at the right contains meters and controls. The readings may be taken by comparison, or directly by means of an arbitrary formation number. One of the meters indicates average steady photocell current. Another shows values of the fluctuations in cell current caused by variations in the sample, whether of thickness or fiber structure. A ratio between these two readings gives the formation number. The steady current component can be set at a fixed value for each sample, in which case the reading on the output meter alone indicates the relative rating. The instrument is connected to a 110 volt a.c. line. Each unit is approximately 17 inches in length.

See coupon page 56

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FOR SPEED • FOR ECONOMY • FOR CONVENIENCE

Ever Ready
world's largest producer of printed gummed labels, is HEADQUARTERS for ROLL LABELS! Our twenty-five years' experience serving 30,000 label users has taught us how to attain economy & "streamline" efficiency in ROLL LABELS. We make every kind . . . for every use!

IDEAS! SEND FOR THE NEW COLORFUL 48 PAGE LABEL BOOK
NO OBLIGATION!

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Nation-wide . . . 2500 Miles Overnight!

Quick and convenient to do: Merely specify "AIRYX" on orders, code word for *"Ship by Air Express Division, Railway Express Agency."* The complete nation-wide speed service for modern merchandise methods. Delivers day and night to 216 cities, and points between, in the United States and Canada. Also direct to Honolulu, Guam, Manila and 32 Latin-American countries. Cost low and economical. Prompt pick-up and delivery, without extra charge, in all cities and principal towns. For service or information phone the nearest Railway Express office.

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One sure way of keeping your cleaning abreast of the newest developments of cleaning methods and materials is to take advantage of Oakite Service.

Constant laboratory research . . . current experience successfully serving thousands of leading concerns the country over is definite assurance that Oakite methods and Oakite materials can also keep your cleaning operations smooth running, economical, ever modern. Write today to have our Service Man call. No obligation.

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NOTE TO ADVERTISING AND SALES EXECUTIVES

Take a Tip from Henry Ford

When baseball fans' enthusiasm reached fever heat last fall, astute Henry Ford bought the broadcasting rights for the World Series.

When purchasing agents throughout the country are "steamed up" about *their* Biggest Event of the Year, astute advertisers can take a tip from Mr. Ford, i. e., to reach a large, logical audience at an opportune time.

For industrial advertisers that time is here. From May 24th to 27th the 1937 Convention of the National Association of Purchasing Agents will be in session at the Hotel William Penn, Pittsburgh.

1,200 "P.A.'s" who will attend plus about 6,800 "stay-at-homes"—8,000 in all—will get *all* Convention news from PURCHASING. The box at the right tells how PURCHASING covers the convention.

If "P.A.'s" for 8,000 of the country's largest users of materials, equipment and supplies mean anything to you, spin your sales story to them in PURCHASING's May (Pre-Convention) and June (Convention) issues.

EDITORIAL COVERAGE

●

PURCHASING's May issue will contain the full detailed program of the N.A.P.A. Convention—plus other Convention news and regular editorial material.

This issue will be distributed to purchasing agents at the convention in addition to the regular mailing.

PURCHASING's June issue will bear the *only complete published report* of the Convention proceedings—the *only nationally distributed publication* to contain this report.

Many "P.A.'s" retain PURCHASING's Annual Convention issue permanently for reference purposes.

Going—Going—GONE!

Within 48 hours after being placed on the block, all exhibit space for the N. A. P. A. Informashow was snapped up. Proof that advertisers recognize the importance of the "P.A."

Rates and additional information furnished on request

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